

TEST REPORT

Product : 9.7 inch 3G Phone Tablet
Trade mark : Dragon Touch, KINGPAD, KINGSLIM, AKASO
Model/Type reference : E97, E97 PRO, E97X, E97 PLUS, E970, E97 ULTIMATE
Serial Number : N/A
Report Number : EED32H0097804
FCC ID : S5V-D970E1
Date of Issue : Dec. 30, 2015
Test Standards : 47 CFR Part 2(2014)
47 CFR Part 22 subpart H(2014)
47 CFR Part 24 subpart E(2014)
Test result : PASS

Prepared for:

Proexpress Distributor LLC
11011 GREENWOOD AVE. N APT 5, SEATTLE, WA 98103.

Prepared by:

Centre Testing International Group Co., Ltd.
Hongwei Industrial Zone, Bao'an 70 District,
Shenzhen, Guangdong, China
TEL: +86-755-3368 3668
FAX: +86-755-3368 3385



Compiled by:

Eman-Li

Reviewed by:

Kevin Yang

Approved by:

Sheek Luo

Date:

Dec. 30, 2015

Sheek Luo

Lab supervisor

Check No.: 2212890594

2 Version

Version No.	Date	Description
00	Dec. 30, 2015	Original

3 Test Summary

GSM 850, WCDMA(Band V)			
Test Item	Test Requirement	Test method	Result
Conducted output power	Part 2.1046(a)/Part 22.913(a)	TIA-603-D-2010&KDB 971168 D01v02r02	PASS
Effective Radiated Power of Transmitter(ERP)	Part 2.1046(a)/Part 22.913(a)	TIA-603-D-2010&KDB 971168 D01v02r02	PASS
99%&26dB Occupied Bandwidth	Part 2.1049(h)	Part 22.917(b)&KDB 971168 D01v02r02	PASS
Band Edge at antenna terminals	Part 2.1051/Part 22.917(a)	Part 22.917(b)&KDB 971168 D01v02r02	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-D-2010&KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)	TIA-603-D-2010&KDB 971168 D01v02r02	PASS
Frequency stability	Part 2.1055/ Part 22.355	TIA-603-D-2010&KDB 971168 D01v02r02	PASS
GSM 1900,WCDMA(Band II)			
Test Item	Test Requirement	Test method	Result
Conducted output power	Part 2.1046(a) /Part 24.232(c)	TIA-603-D-2010&KDB 971168 D01v02r02	PASS
Effective Radiated Power of Transmitter(EIRP)	Part 2.1046(a) / Part 24.232(c)	TIA-603-D-2010&KDB 971168 D01v02r02	PASS
peak-to-average ratio	Part 24.232(d)	KDB 971168 D01v02r02	PASS
99%&26dB Occupied Bandwidth	Part 2.1049(h)	Part 24.238(b)&KDB 971168 D01v02r02	PASS
Band Edge at antenna terminals	Part 2.1051/ Part 24.238(a)	Part 24.238(b)&KDB 971168 D01v02r02	PASS
Spurious emissions at antenna terminals	Part 2.1051/ Part 2.1057/ Part 24.238(a)(b)	TIA-603-D-2010&KDB 971168 D01v02r02	PASS
Field strength of spurious radiation	Part 2.1053 /Part 2.1057/ Part 24.238(a)(b)	TIA-603-D-2010&KDB 971168 D01v02r02	PASS
Frequency stability	Part 2.1055/Part 24.235	TIA-603-D-2010&KDB 971168 D01v02r02	PASS

Remark:

The tested sample(s) and the sample information are provided by the client.

Model No.: E97, E97 PRO, E97X, E97 PLUS, E970, E97 ULTIMATE

Only the model E97 was tested, since the electrical circuit design, layout, components used and internal wiring were identical for the above models, with difference being model name and brand name.

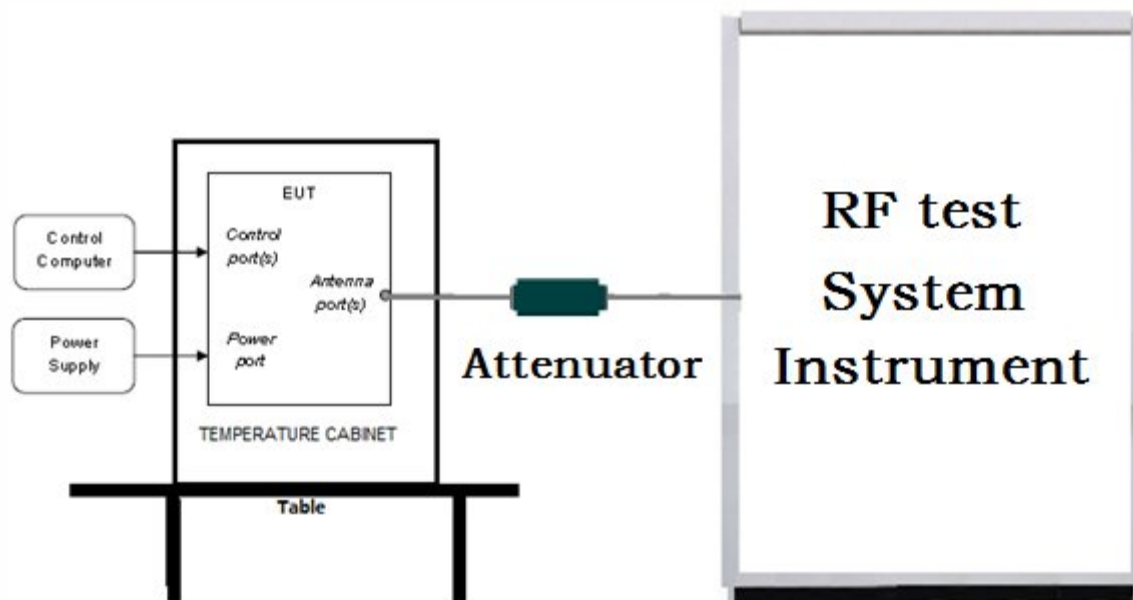
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5 Test Requirement

5.1 Test setup

5.1.1 For Conducted test setup



5.1.2 For Radiated Emissions test setup

Radiated Emissions setup:

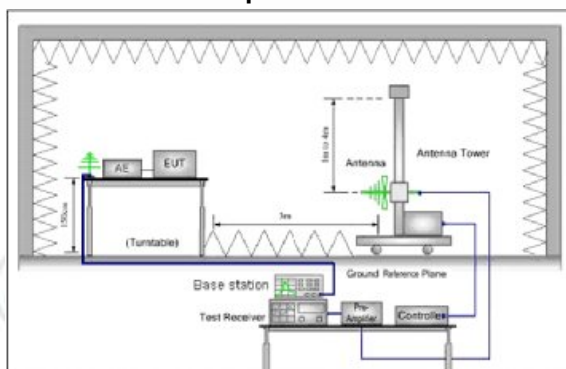


Figure 1.30MHz to 1GHz

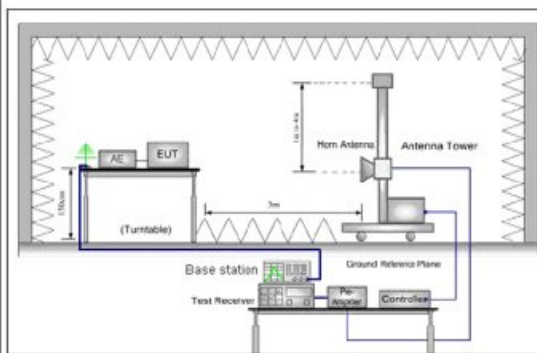


Figure 2. above 1GHz

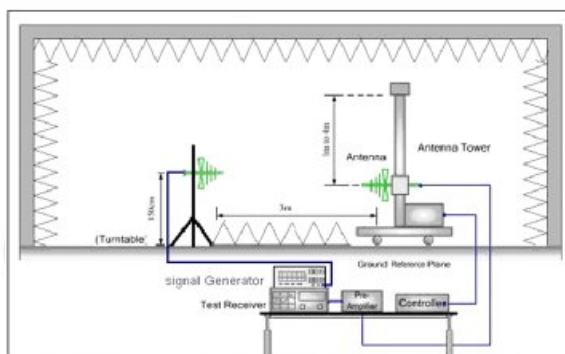


Figure 1. 30MHz to 1GHz

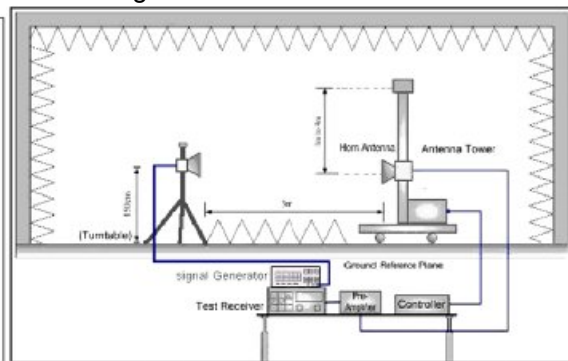


Figure 2. above 1GHz

5.2 Test Environment

Operating Environment:	
Temperature:	24°C
Humidity:	50% RH
Atmospheric Pressure:	1010mbar

5.3 Test Condition

Test channel:

Test Mode	Tx/Rx	RF Channel		
		Low(L)	Middle(M)	High(H)
GSM/GPRS 850MHz	Tx (824 MHz ~849 MHz)	Channel 128	Channel 190	Channel 251
		824.2MHz	836.6 MHz	848.8 MHz
	Rx (869 MHz ~894 MHz)	Channel 128	Channel 190	Channel 251
		869.2 MHz	881.6 MHz	893.8 MHz
WCDMA/HS DPA band V	Tx (824 MHz ~849 MHz)	Channel 4132	Channel 4182	Channel 4233
		826.4 MHz	836.4 MHz	846.6 MHz
	Rx (869 MHz ~894 MHz)	Channel 4357	Channel 4407	Channel 4458
		871.4 MHz	881.4 MHz	891.6 MHz
GSM/GPRS 1900MHz	Tx (1850 MHz ~1910 MHz)	Channel 512	Channel 661	Channel 810
		1850.2MHz	1880.0 MHz	1909.8 MHz
	Rx (1930 MHz ~1990 MHz)	Channel 512	Channel 661	Channel 810
		1930.2 MHz	1960.0 MHz	1989.8 MHz
WCDMA/HS DPA Band II	Tx (1850 MHz ~1910 MHz)	Channel 9262	Channel 9400	Channel 9538
		1852.4 MHz	1880.0 MHz	1907.6 MHz
	Rx (1930 MHz ~1990 MHz)	Channel 9662	Channel 9800	Channel 9938
		1932.4 MHz	1960.0 MHz	1987.6 MHz

Test mode:

Test Mode	Test Modes description
GSM/TM1	GSM system,GSM,GMSK modulation
GSM/TM2	GSM system,GPRS,GMSK modulation
Test Mode	Test Modes description
UMTS/TM1	WCDMA system,QPSK modulation
UMTS/TM2	HSDPA system,QPSK modulation

NOTE: The test mode(s) are selected according to relevant radio technology specifications.

6 General Information

6.1 Client Information

Applicant:	Proexpress Distributor LLC
Address of Applicant:	11011 GREENWOOD AVE. N APT 5, SEATTLE, WA 98103.
Manufacturer:	Proexpress Distributor LLC
Address of Manufacturer:	11011 GREENWOOD AVE. N APT 5, SEATTLE, WA 98103.

6.2 General Description of EUT

Product Name:	9.7 inch 3G Phone Tablet	
Model No.:	E97, E97 PRO, E97X, E97 PLUS, E970, E97 ULTIMATE	
Test Mode No.:	E97	
Trade Mark:	Dragon Touch, KINGPAD, KINGSLIM, AKASO	
EUT Supports Radios application:	GSM/GPRS 850MHz/1900MHz WCDMA/HSDPA Band V/Band II	
Power Supply:	Adapter:	Model: WTA0502000USB1 Input: AC 100-240V, 50/60Hz, 0.3A Output: DC 5.0V=2000mA
	Battery:	Li-ion 3.7V/6000mAH
Sample Received Date:	Jul. 22, 2015	
Sample tested Date:	Jul. 22, 2015 to Dec. 30, 2015	

6.3 Product Specification subjective to this standard

Frequency Band:	GSM/GPRS 850: Tx:824.20 -848.80MHz; Rx: 869.20 – 893.80MHz GSM/GPRS 1900: Tx:1850.20 – 1909.80MHz; Rx:1930.20 – 1989.80MHz WCDMA/HSDPA Band V: Tx:826.40 -846.60MHz; Rx: 871.40 – 891.60MHz WCDMA/HSDPA Band II: Tx:1852.40 – 1907.60MHz; Rx:1932.40 – 1987.60MHz
Modulation Type:	GSM/GPRS Mode with GMSK Modulation WCDMA Mode with QPSK Modulation
Sample Type:	Portable production
Antenna Type and Gain:	Type: Integral antenna Gain: GSM 850: -1.2dBi, GSM 1900: -1.4dBi, WCDMA 850: -1.15dBi, WCDMA 1900: -1.2dBi

6.4 Description of Support Units

The EUT has been tested independently.

6.5 Test Location

All tests were performed at:

Centre Testing International Group Co., Ltd.

Hongwei Industrial Zone, Bao'an 70 District, Shenzhen, Guangdong, China518101

Telephone: +86 (0) 755 33683668 Fax:+86 (0) 755 33683385

No tests were sub-contracted.

6.6 Test Facility

The test facility is recognized, certified, or accredited by the following organizations:

CNAS-Lab Code: L1910

Centre Testing International Group Co., Ltd. has been assessed and proved to be in compliance with CNAS-CL01 Accreditation Criteria for Testing and Calibration Laboratories (identical to ISO/IEC 17025: 2005 General Requirements) for the Competence of Testing and Calibration Laboratories..

A2LA-Lab Cert. No. 3061.01

Centre Testing International Group Co., Ltd. EMC Laboratory has been accredited by A2LA for technical competence in the field of electrical testing, and proved to be in compliance with ISO/IEC 17025: 2005 General Requirements for the Competence of Testing and Calibration Laboratories and any additional program requirements in the identified field of testing.

FCC-Registration No.: 565659

Centre Testing International Group Co., Ltd. EMC Laboratory has been registered and fully described in a report filed with the FCC (Federal Communications Commission). The acceptance letter from the FCC is maintained in our files. Registration 565659.

IC-Registration No.: 7408A

The 3m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408A .

IC-Registration No.: 7408B

The 10m Alternate Test Site of Centre Testing International Group Co., Ltd. has been registered by Certification and Engineering Bureau of Industry Canada for the performance of radiated measurements with Registration No. 7408B.

NEMKO-Aut. No.: ELA503

Centre Testing International Group Co., Ltd. has been assessed the quality assurance system, the testing facilities, qualifications and testing practices of the relevant parts of the organization. The quality assurance system of the Laboratory has been validated against ISO/IEC 17025 or equivalent. The laboratory also fulfils the conditions described in Nemko Document NLA-10.

VCCI

The Radiation 3 &10 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: R-4096.

Main Ports Conducted Interference Measurement of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: C-4563.

Telecommunication Ports Conducted Disturbance Measurement of

Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: T-2146.

The Radiation 3 meters site of Centre Testing International Group Co., Ltd. has been registered in accordance with the Regulations for Voluntary Control Measures with Registration No.: G-758

6.7 Deviation from Standards

None.

6.8 Abnormalities from Standard Conditions

None.

6.9 Other Information Requested by the Customer

None.

6.10 Measurement Uncertainty (95% confidence levels, k=2)

No.	Item	Measurement Uncertainty
1	Radio Frequency	7.9×10^{-8}
2	RF power, conducted	0.31dB (30MHz-1GHz)
		0.57dB (1GHz-18GHz)
3	Radiated Spurious emission test	4.5dB (30MHz-1GHz)
		4.8dB (1GHz-12.75GHz)
4	Conduction emission	3.6dB (9kHz to 150kHz)
		3.2dB (150kHz to 30MHz)
5	Temperature test	0.64°C
6	Humidity test	2.8%
7	DC power voltages	0.025%

7 Equipment List

Communication RF test system instrument					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. Date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
Spectrum Analyzer	Agilent	E4440A	MY46185649	12-17-2015	12-15-2016
Signal Generator	Agilent	E4438C	MY45095744	04-19-2015	04-18-2016
Communication test set	Agilent	E5515C	GB47050533	01-13-2015	01-12-2016
Signal Generator	Keysight	E8257D	MY53401106	04-14-2015	04-13-2016
Communication test set	R&S	CMW500	152394	04-19-2015	04-18-2016
High-pass filter(3-18GHz)	Sinoscite	FL3CX03WG18 NM12-0398-002	---	01-13-2015	01-12-2016
High-pass filter(5-18GHz)	MICRO-TRONICS	SPA-F-63029-4	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX01CA09C L12-0395-001	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX01CA08C L12-0393-001	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX02CA04C L12-0396-002	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX02CA03C L12-0394-001	---	01-13-2015	01-12-2016
DC Power	Keysight	E3642A	MY54426112	03-31-2015	03-30-2016
DC Power	Keysight	E3642A	MY54426115	03-31-2015	03-30-2016
PC-2	Lenovo	R4960d	---	04-01-2015	03-31-2016
PC-3	Lenovo	R4960d	---	04-01-2015	03-31-2016
RF control unit	JS Tonscend	JS0806-1	20158060004	04-01-2015	03-31-2016
DC power Box	JS Tonscend	JS0806-4	20158060007	04-01-2015	03-31-2016
LTE Automatic test software	JS Tonscend	JSTS1120-1	---	04-01-2015	03-31-2016
WCDMA Automatic test software	JS Tonscend	JSTS1120-3	---	04-01-2015	03-31-2016
GSM Automatic test software	JS Tonscend	JSTS1120-3	---	04-01-2015	03-31-2016

Radiated Spurious Emission & Radiated Emission					
Equipment	Manufacturer	Mode No.	Serial Number	Cal. date (mm-dd-yyyy)	Cal. Due date (mm-dd-yyyy)
3M Chamber & Accessory Equipment	TDK	SAC-3	---	06-02-2013	06-01-2016
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-617	07-13-2015	07-29-2016
Microwave Preamplifier	Agilent	8449B	3008A02425	02-05-2015	02-04-2016
Horn Antenna	ETS-LINDGREN	3117	00057410	06-30-2015	06-28-2018
Horn Antenna	ETS-LINDGREN	3117	00057407	07-20-2015	07-19-2016
Loop Antenna	ETS	6502	00071730	07-30-2015	07-28-2017
Log Test-Antenna	SCHWARZBECK	VULSP 9111B	TTF20120145	03-27-2015	26-03-2016
Biconical Antenna	SCHWARZBECK	VHBB9124+BBA9106	TTF20120144	03-27-2015	03-26-2016
TRILOG Broadband Antenna	SCHWARZBECK	VULB9163	9163-617	07-31-2015	07-29-2016
Spectrum Analyzer	R&S	FSP40	100416	06-30-2015	06-28-2016
Receiver	R&S	ESCI	100435	06-30-2015	06-28-2016
Multi device Controller	maturo	NCD/070/10711112	---	01-13-2015	01-12-2016
LISN	schwarzbeck	NNBM8125	81251547	06-30-2015	06-28-2016
LISN	schwarzbeck	NNBM8125	81251548	06-30-2015	06-28-2016
Signal Generator	Agilent	E4438C	MY45095744	04-19-2015	04-18-2016
Signal Generator	Keysight	E8257D	MY53401106	04-14-2015	04-13-2016
Temperature/ Humidity Indicator	TAYLOR	1451	1905	07-08-2015	07-06-2016
Communication test set	Agilent	E5515C	GB47050533	01-13-2015	01-12-2016
Cable line	Fulai(7M)	SF106	5219/6A	01-13-2015	01-12-2016
Cable line	Fulai(6M)	SF106	5220/6A	01-13-2015	01-12-2016
Cable line	Fulai(3M)	SF106	5216/6A	01-13-2015	01-12-2016
Cable line	Fulai(3M)	SF106	5217/6A	01-13-2015	01-12-2016
Communication test set	R&S	CMW500	152394	04-19-2015	04-18-2016
High-pass filter(3-18GHz)	Sinoscite	FL3CX03WG18NM12-0398-002	---	01-13-2015	01-12-2016
High-pass filter(5-18GHz)	MICRO-TRONICS	SPA-F-63029-4	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX01CA09CL12-0395-001	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX01CA08CL12-0393-001	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX02CA04CL12-0396-002	---	01-13-2015	01-12-2016
band rejection filter	Sinoscite	FL5CX02CA03CL12-0394-001	---	01-13-2015	01-12-2016

8 Radio Technical Requirements Specification

Reference documents for testing:

No.	Identity	Document Title
1	PART 22 (2014)	PART 22 – PUBLIC MOBILE SERVICES Subpart H – Cellular Radiotelephone Service
2	PART 24 (2014)	PART 24 – PERSONAL COMMUNICATIONS SERVICES Subpart E – Broadband PCS
3	PART 2 (2014)	Frequency allocations and radio treaty matters; general rules and regulations
4	TIA-603-D-2010	Land Mobile FM or PM -Communications Equipment -Measurement and Performance Standards
5	KDB971168 D01	KDB971168 D01 Power Meas License Digital Systems v02r02

Test Results List:

Test Requirement	Test method	Test item	Verdict	Note
Part 2.1046(a)/Part 22.913(a)/ part 24.232(c)	ITA-603-D&KDB 971168 D01v02r02	Conducted output power	PASS	Appendix A)
Part 24.232(d)	KDB 971168 D01v02r02	peak-to-average ratio	PASS	Appendix B)
Part 2.1049(h)	Part 22.917(b)/ Part 24.238(b)&KDB 971168 D01v02r02	99% &26dB Occupied Bandwidth	PASS	Appendix C)
Part 2.1051/Part 22.917(a)/ Part 24.238(a)	Part 22.917(b)/ Part 24.238(b)&KDB 971168 D01v02r02	Band Edge at antenna terminals	PASS	Appendix D)
Part 2.1051/ Part 2.1057/ Part 22.917(a)(b)/ Part 24.238(a)(b)	ITA-603-D&KDB 971168 D01v02r02	Spurious emissions at antenna terminals	PASS	Appendix E)
Part 2.1055/ Part 22.355/ Part 24.235	ITA-603-D&KDB 971168 D01v02r02	Frequency stability	PASS	Appendix F)
Part 2.1053/ Part 2.1057/ Part 22.917(a)(b)/ Part 24.238(a)(b)	ITA-603-D&KDB 971168 D01v02r02	Field strength of spurious radiation	PASS	Appendix G)
Part 2.1046(a)/Part 22.913(a)/ Part 24.232(c)	ITA-603-D&KDB 971168 D01v02r02	Effective Radiated Power of Transmitter(ERP)	PASS	Appendix H)

Appendix A) RF Power Output

Test Requirement:	Part 2.1046(a)		
Test Method:	TIA-603-D-2010 Clause 2.2.1		
Test Setup:	Refer to section 5 for details		
Limit:	Mode	GSM 850/WCDMA/HSDPA /HSUPA 850 Band V	GSM 1900/WCDMA/HSDPA /HSUPA 1900 Band V
	Frequency	824 – 849MHz	1850 – 1910MHz
	Limit	38.45dBm (ERP)	33.01dBm (EIRP)
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and power meter, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The power output at the transmitter antenna port was determined by adding the value of the cable insertion loss to the power reading. The tests were performed at three frequencies (low channel, middle channel and high channel) and on the highest power levels, which can be setup on the transmitters.		
Instruments Used:	Refer to section 7 for details		
Test Results:	Pass		

Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
GSM850	GSM/TM1	LCH	32.03	38.5	PASS
		MCH	31.89	38.5	PASS
		HCH	31.92	38.5	PASS
	GSM/TM2	LCH	31.70	38.5	PASS
		MCH	31.60	38.5	PASS
		HCH	31.40	38.5	PASS
Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
GSM1900	GSM/TM1	LCH	29.01	33	PASS
		MCH	28.83	33	PASS
		HCH	28.61	33	PASS
	GSM/TM2	LCH	28.50	33	PASS
		MCH	28.00	33	PASS
		HCH	27.90	33	PASS

Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
WCDMA850	UMTS/TM1	LCH	22.56	38.5	PASS
		MCH	22.87	38.5	PASS
		HCH	22.77	38.5	PASS
Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
WCDMA850	UMTS/TM2	LCH_SubTest-1	22.52	38.5	PASS
		LCH_SubTest-2	22.23	38.5	PASS
		LCH_SubTest-3	22.41	38.5	PASS
		LCH_SubTest-4	22.35	38.5	PASS
		MCH_SubTest-1	22.86	38.5	PASS
		MCH_SubTest-2	22.66	38.5	PASS
		MCH_SubTest-3	22.54	38.5	PASS
		MCH_SubTest-4	22.75	38.5	PASS
		HCH_SubTest-1	22.62	38.5	PASS
		HCH_SubTest-2	22.53	38.5	PASS
		HCH_SubTest-3	22.65	38.5	PASS
		HCH_SubTest-4	22.48	38.5	PASS

Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
WCDMA1900	UMTS/TM1	LCH	22.60	33	PASS
		MCH	22.85	33	PASS
		HCH	22.61	33	PASS

Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
WCDMA1900	UMTS/TM2	LCH_SubTest-1	22.41	33	PASS
		LCH_SubTest-2	22.23	33	PASS
		LCH_SubTest-3	22.11	33	PASS
		LCH_SubTest-4	22.35	33	PASS
		MCH_SubTest-1	22.56	33	PASS
		MCH_SubTest-2	22.65	33	PASS
		MCH_SubTest-3	22.44	33	PASS
		MCH_SubTest-4	22.46	33	PASS
		HCH_SubTest-1	22.42	33	PASS
		HCH_SubTest-2	22.13	33	PASS
		HCH_SubTest-3	22.65	33	PASS
		HCH_SubTest-4	22.28	33	PASS

Appendix B) Peak-to-Average Ratio

Test Requirement:	Part 24.232(d)
Test Method:	KDB 971168 D01
Test Setup:	Refer to section 5 for details
Limit:	43+10log(P)
Measurement Procedure:	Use one of the procedures to measure the total peak power and record as PPK. Use one of the applicable procedures to measure the total average power and record as PAvg. Both the peak and average power levels must be expressed in the same logarithmic units (e.g., dBm). Determine the PAPR from: $PAPR (dB) = PPK (dBm) - PAvg (dBm)$.
Instruments Used:	Refer to section 7 for details
Test Results:	Pass

Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
GSM1900	GSM/TM1	LCH	0.12	13	PASS
		MCH	0.14	13	PASS
		HCH	0.15	13	PASS
	GSM/TM2	LCH	0.12	13	PASS
		MCH	0.12	13	PASS
		HCH	0.16	13	PASS

Test Band	Test Mode	Test Channel	Measured (dBm)	Limit (dBm)	Verdict
WCDMA1900	UMTS/TM1	LCH	2.66	13	PASS
		MCH	2.99	13	PASS
		HCH	3.06	13	PASS

Appendix C) BandWidth

Test Requirement:	Part 2.1049(h) and RSS-Gen 4.6.1
Test Method:	Part 22.917(b)/Part 24.238(b) and RSS-Gen 4.6.1
Test Setup:	Refer to section 5 for details
Limit:	N/A
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel, middle channel and high channel).the resolution bandwidth of the analyser is set to 100kHz or 1% of the emission bandwidth, the EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to peak or peak hold power.
Instruments Used:	Refer to section 7 for details
Test Results:	Pass

Test Band	Test Mode	Test Channel	99% Occupied Bandwidth (KHZ)	26dB Emission Bandwidth (KHZ)	Verdict
GSM850	GSM/TM1	LCH	248.01	301.15	PASS
		MCH	256.37	320.37	PASS
		HCH	244.04	293.12	PASS
	GSM/TM2	LCH	250.58	311.33	PASS
		MCH	247.24	310.41	PASS
		HCH	242.29	311.42	PASS

Test Band	Test Mode	Test Channel	99% Occupied Bandwidth (KHZ)	26dB Emission Bandwidth (KHZ)	Verdict
GSM1900	GSM/TM1	LCH	247.70	292.02	PASS
		MCH	253.29	325.22	PASS
		HCH	246.25	301.74	PASS
	GSM/TM2	LCH	250.88	311.15	PASS
		MCH	246.67	311.44	PASS
		HCH	243.24	309.77	PASS

Test Band	Test Mode	Test Channel	99% Occupied Bandwidth (KHZ)	26dB Emission Bandwidth (KHZ)	Verdict
WCDMA850	UMTS/TM1	LCH	4167.2	4682	PASS
		MCH	4150.3	4690	PASS
		HCH	4143.4	4661	PASS

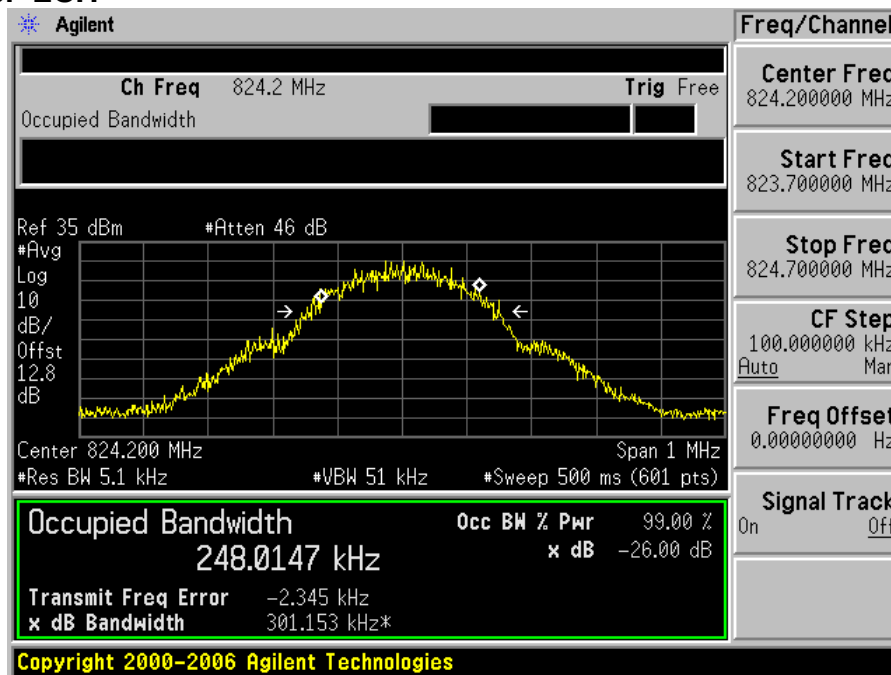
Test Band	Test Mode	Test Channel	99% Occupied Bandwidth (KHZ)	26dB Emission Bandwidth (KHZ)	Verdict
WCDMA1900	UMTS/TM1	LCH	4172.2	4709	PASS
		MCH	4159.0	4684	PASS
		HCH	4152.8	4689	PASS

For GSM

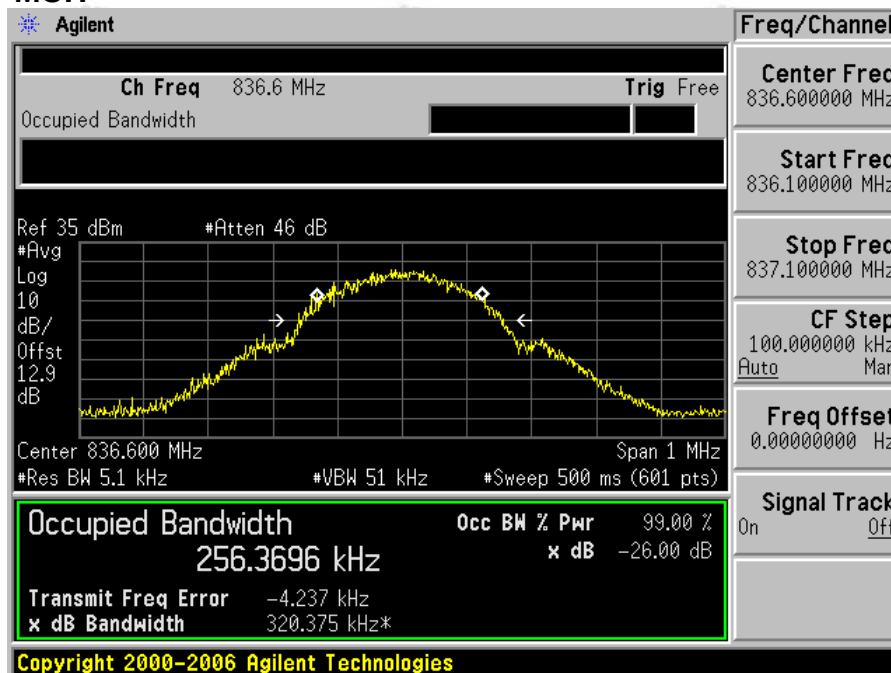
Test Band=GSM850

Test Mode=GSM/TM1

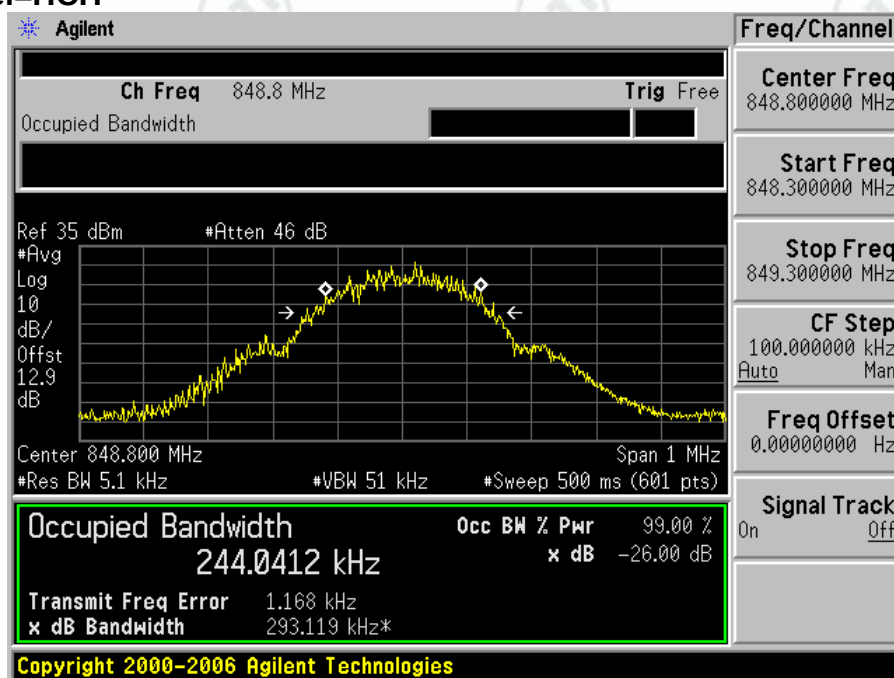
Test Channel=LCH



Test Channel=MCH

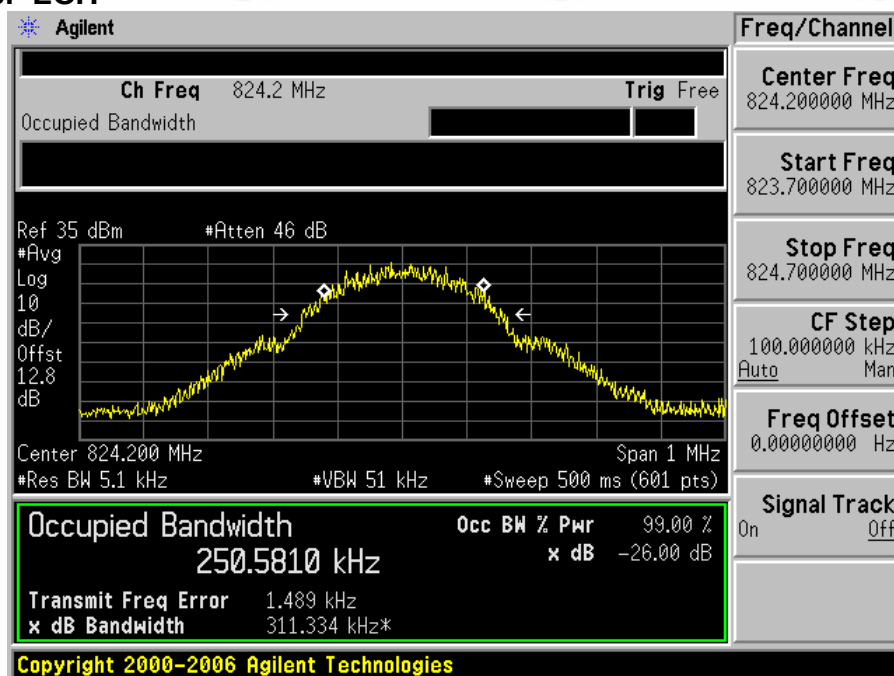


Test Channel=HCH

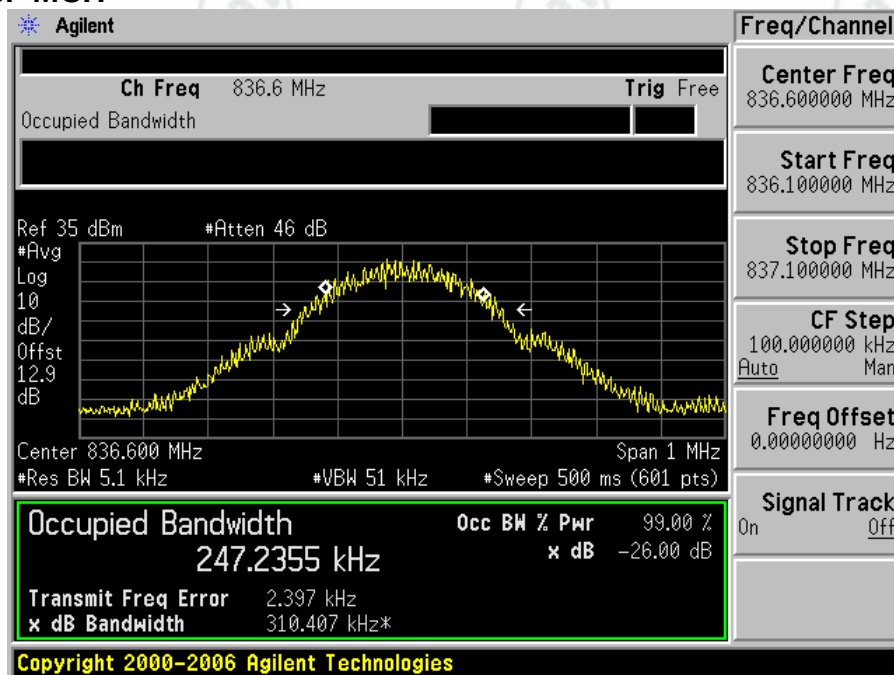


Test Mode=GSM/TM2

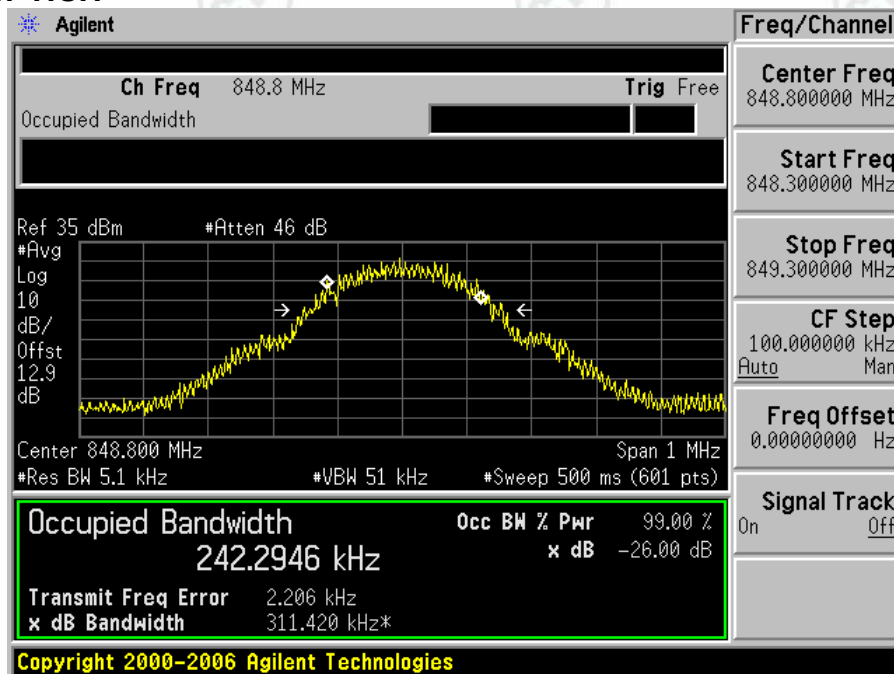
Test Channel=LCH



Test Channel=MCH



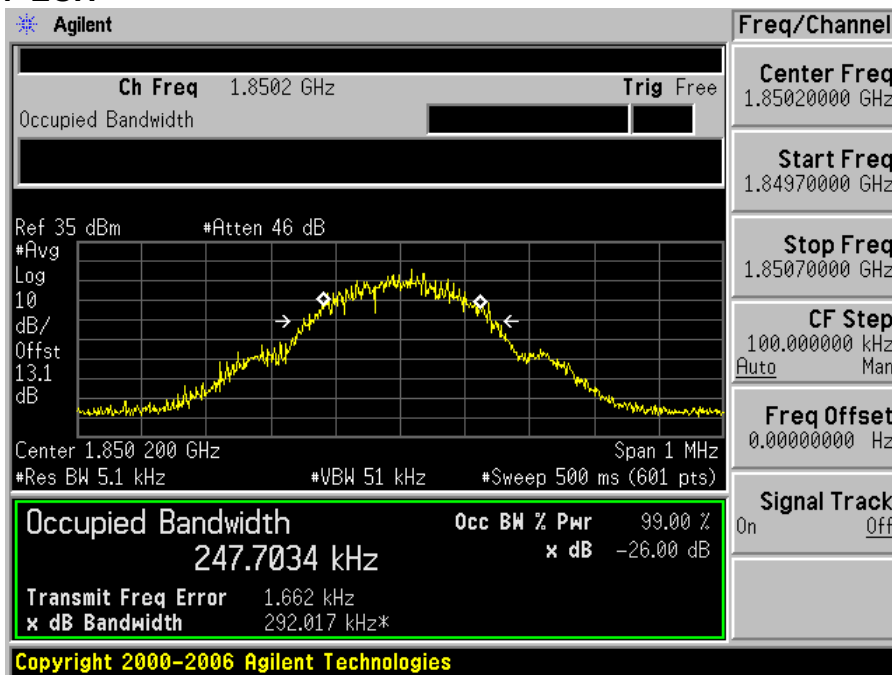
Test Channel=HCH



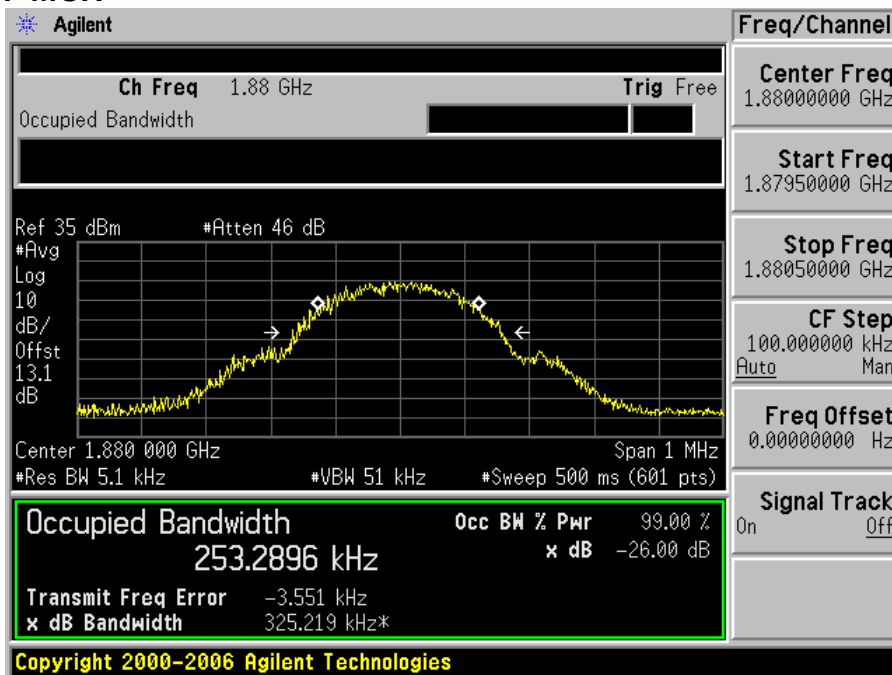
Test Band=GSM1900

Test Mode=GSM/TM1

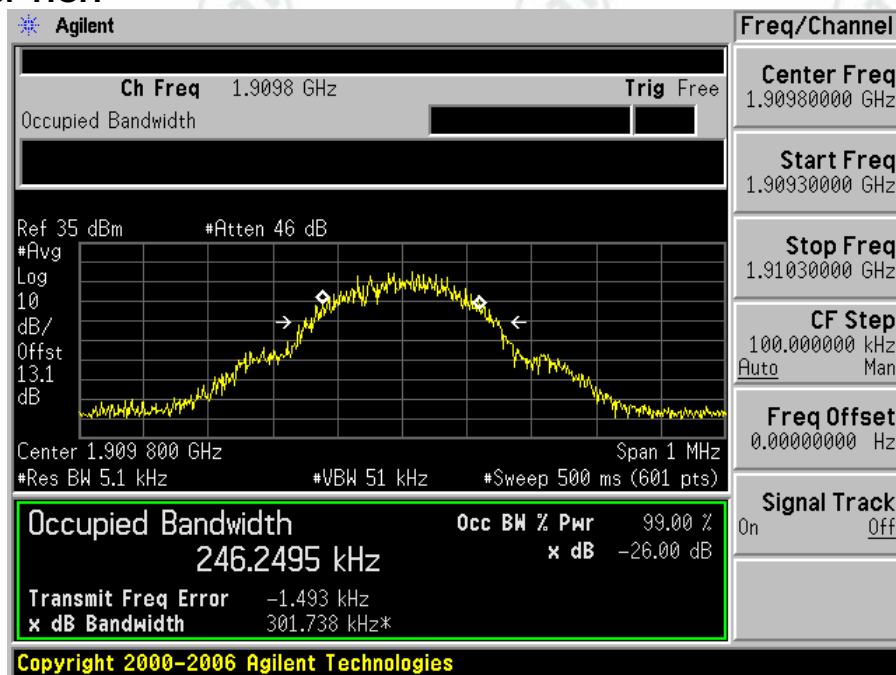
Test Channel=LCH



Test Channel=MCH

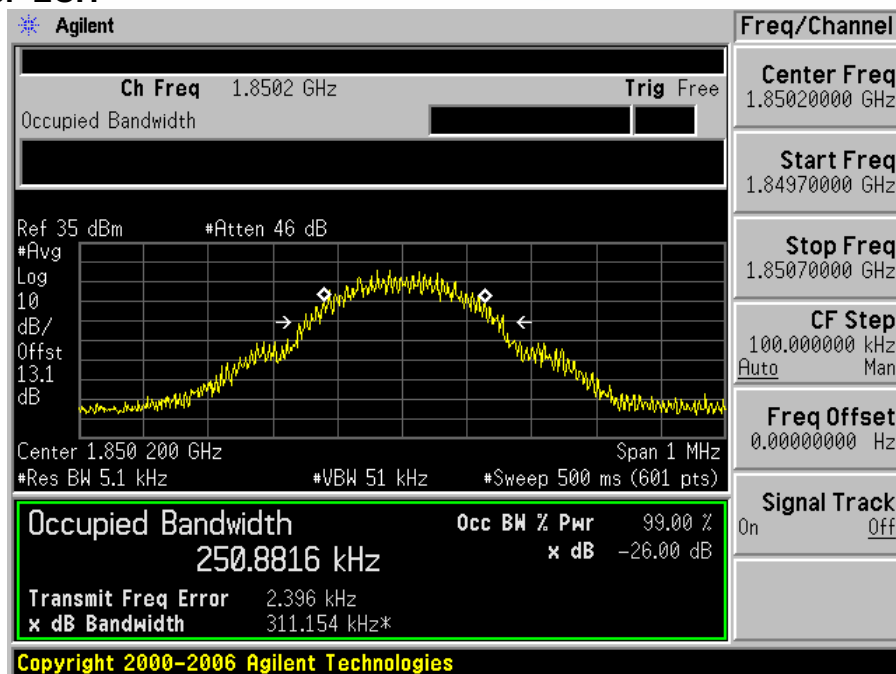


Test Channel=HCH



Test Mode=GSM/TM2

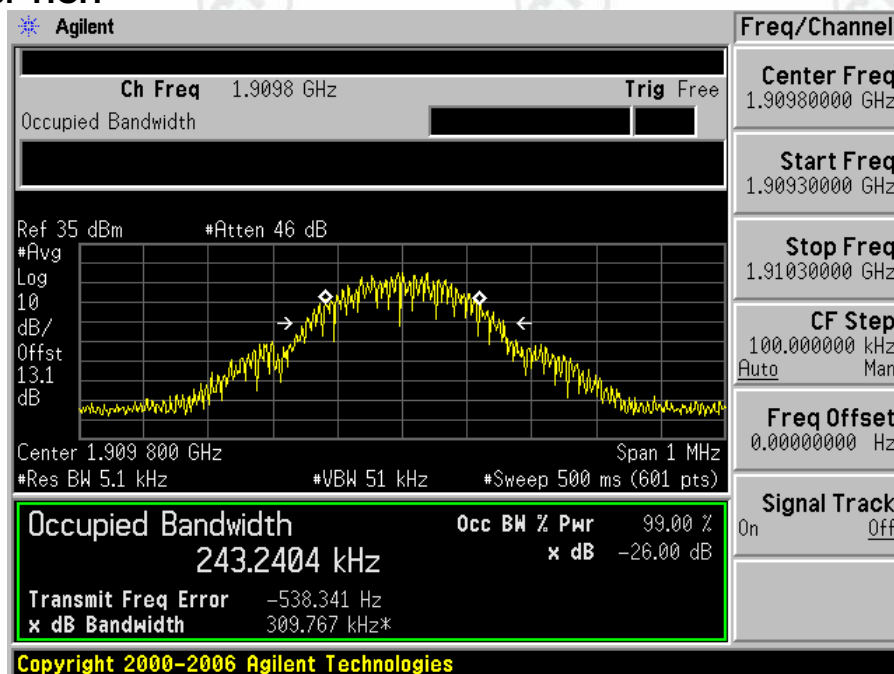
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH

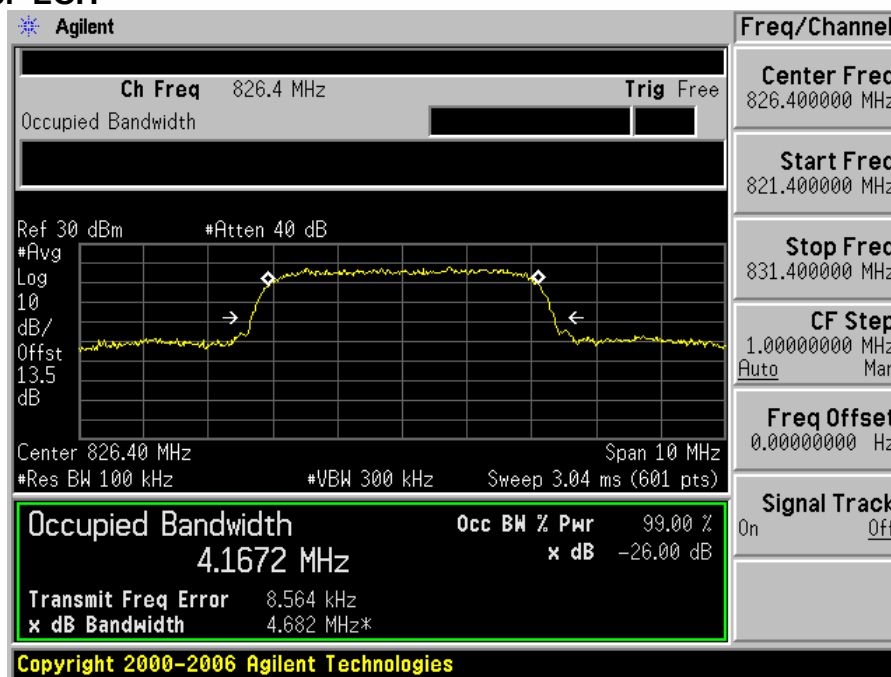


For WCDMA

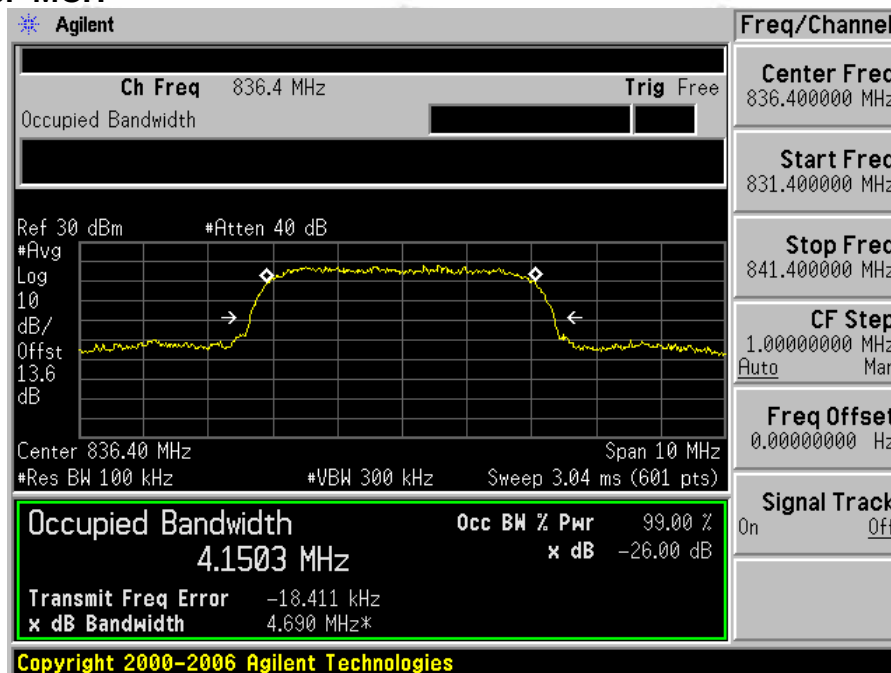
Test Band=WCDMA850

Test Mode=UMTS/TM1

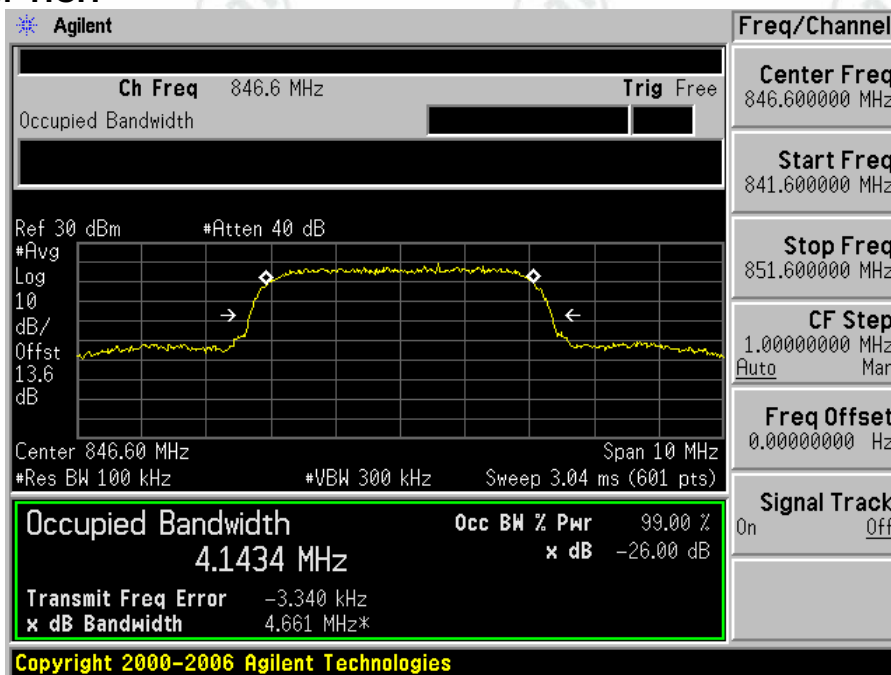
Test Channel=LCH



Test Channel=MCH



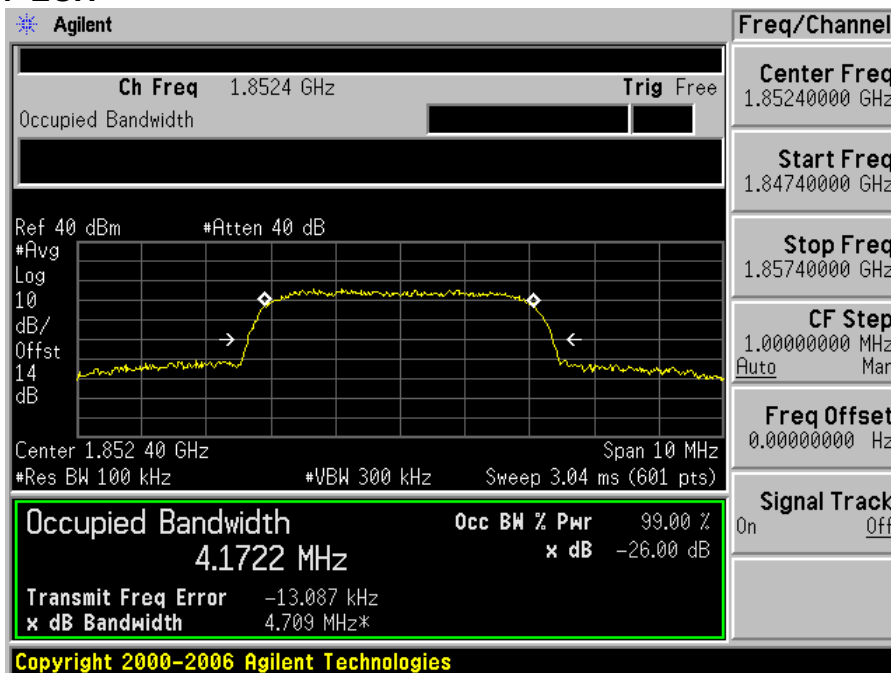
Test Channel=HCH



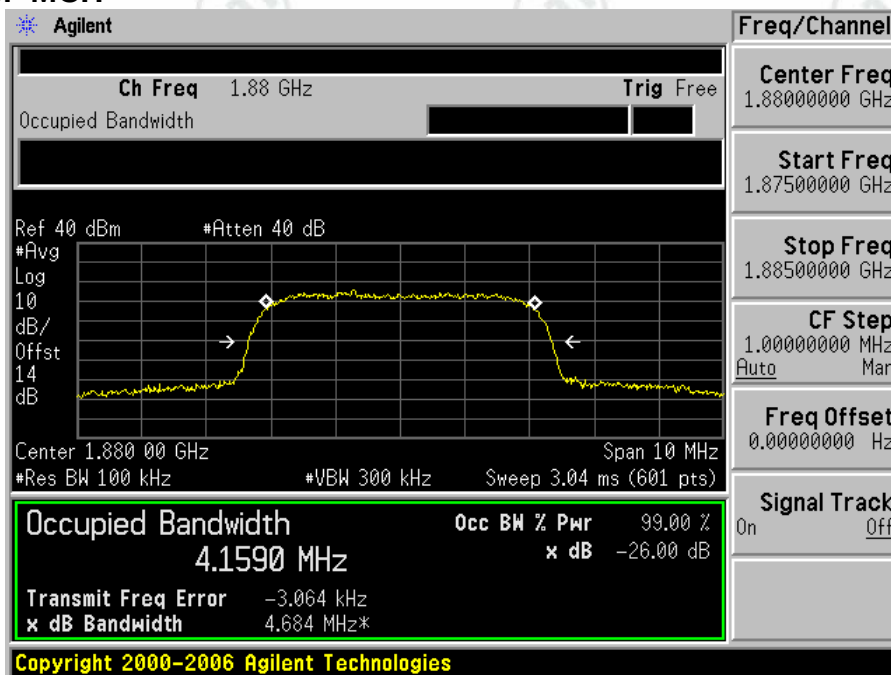
Test Band=WCDMA1900

Test Mode=UMTS/TM1

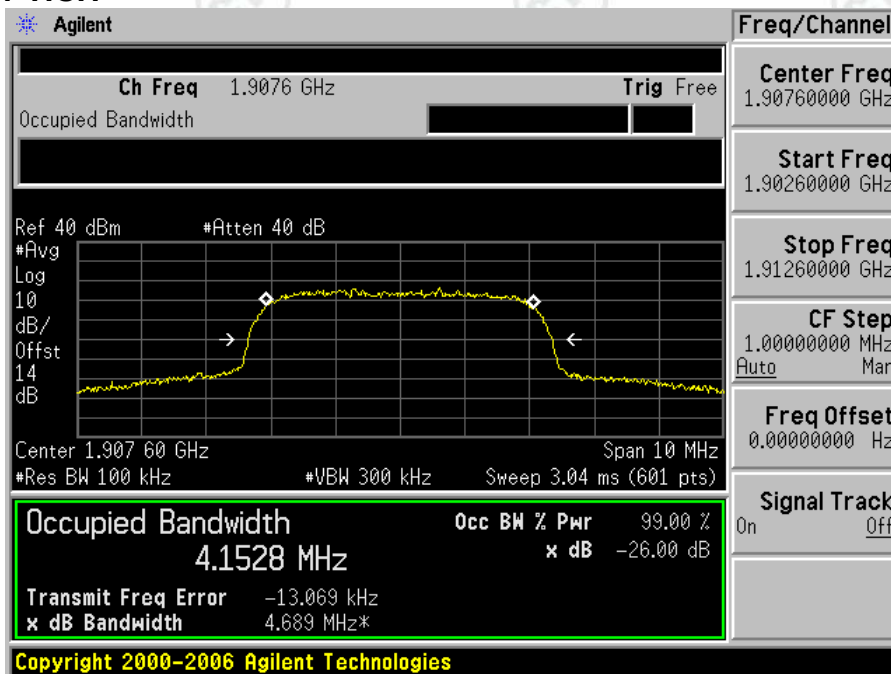
Test Channel=LCH



Test Channel=MCH



Test Channel=HCH



Appendix D) Band Edges Compliance

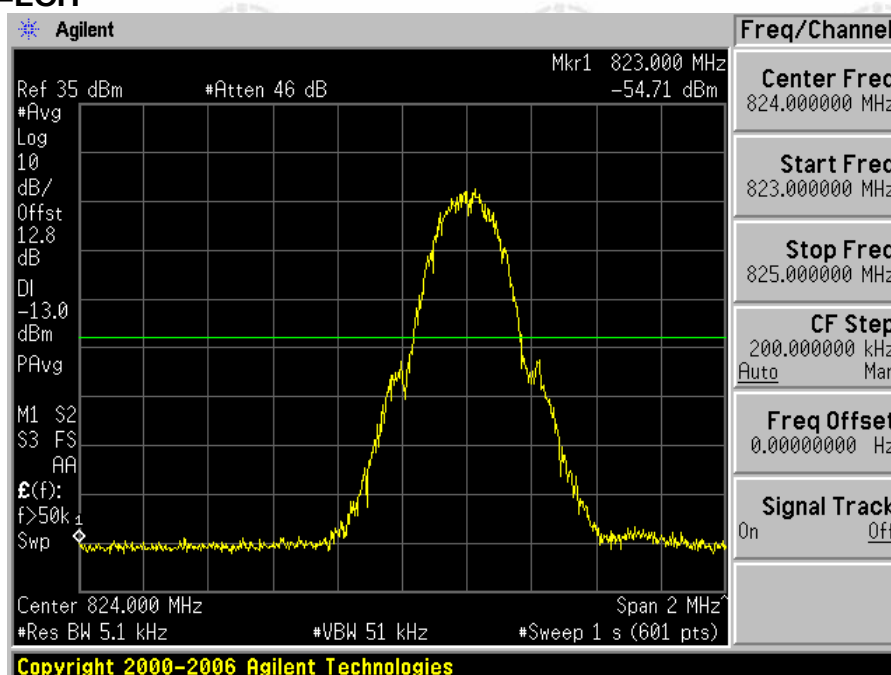
Test Requirement:	Part 2.1051 and RSS-132 Clause 4.5/RSS-133 Clause 6.5		
Test Method:	Part 22.917(b)/Part 24.238(b) and RSS-132 Clause 4.5/RSS-133 Clause 6.5		
Test Setup:	Refer to section 5 for details		
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyser, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel).in the 1MHz bands immediately outside and adjacent to the frequency block a resolution bandwidth of 100kHz or 1% of the emission bandwidth of the fundamental emission of the transmitter may be employed. The EUT emission bandwidth is measured as the width of the signal between two points, outside of which all emission are attenuated at least 26dB below the transmitter power. The video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to peak or peak hold power.		
Limit:	Operation Band	Frequency Range (MHz)	Limit
	GSM/GPRS/EDGE/WCDMA 850	Below 824 and above 849	Attenuated at least $43+10\log(P)$
	GSM/GPRS/EDGE/WCDMA 1900	Below 1850 and above 1910	Attenuated at least $43+10\log(P)$
Instruments Used:	Refer to section 7 for details		
Test Results:	Pass		

For GSM

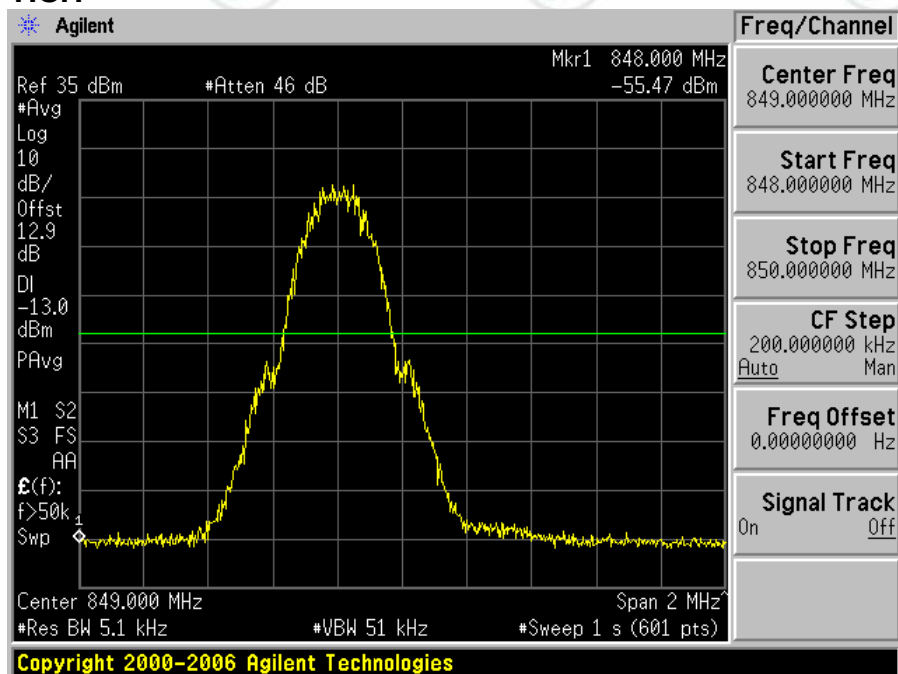
Test Band=GSM850

Test Mode=GSM/TM1

Test Channel=LCH

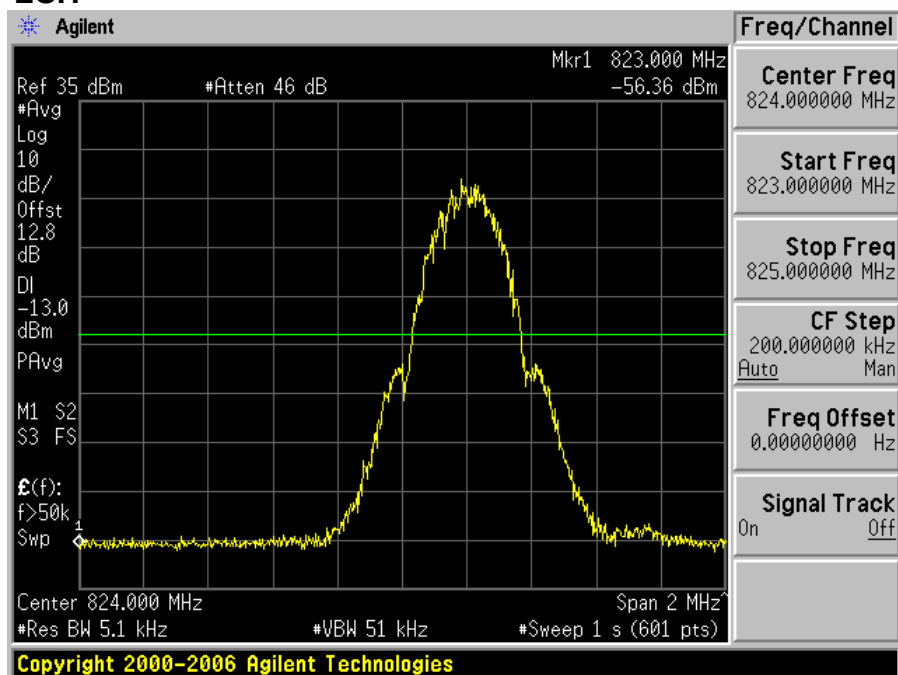


Test Channel=HCH

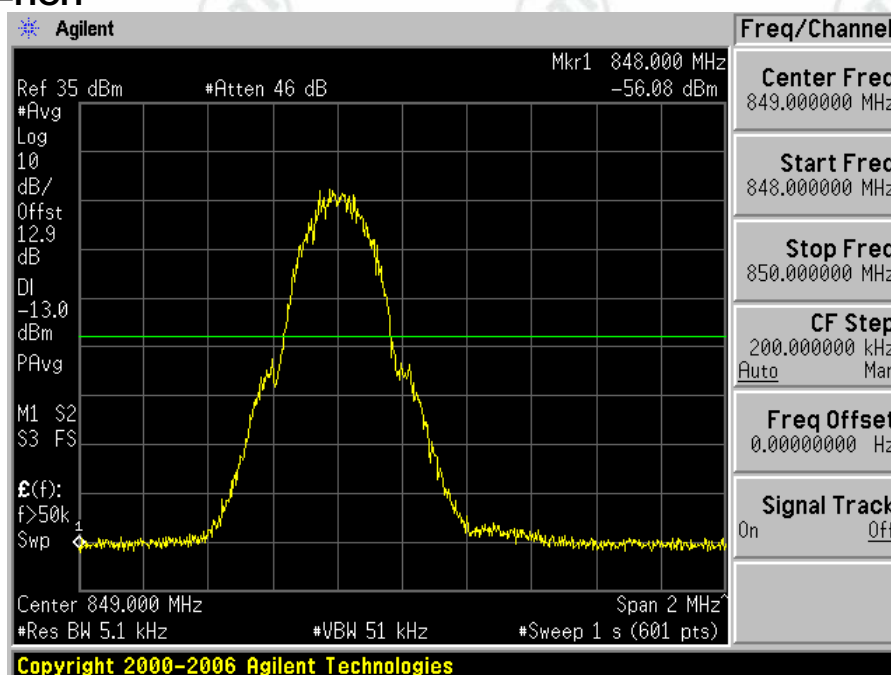


Test Mode=GSM/TM2

Test Channel=LCH



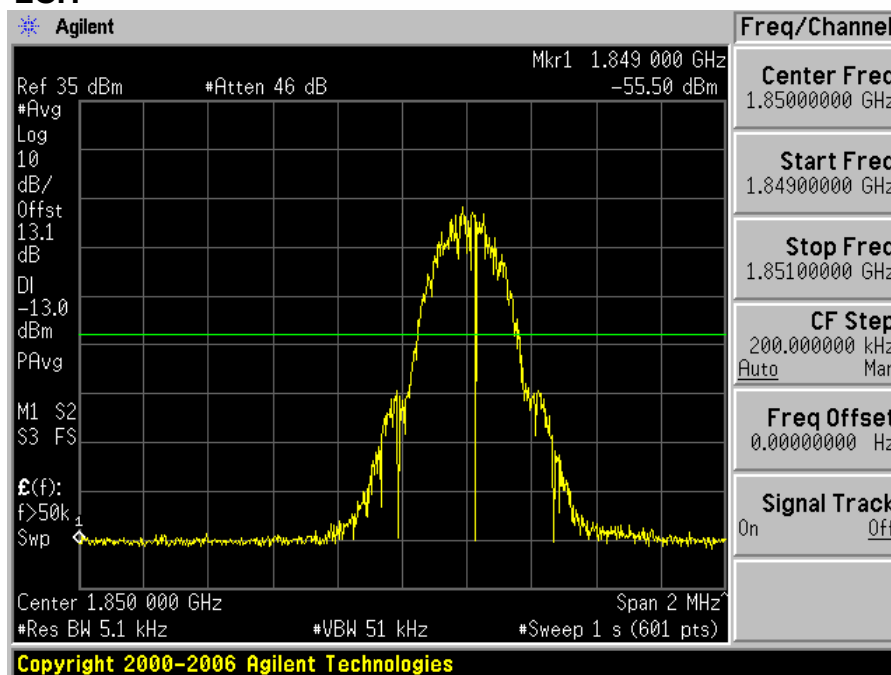
Test Channel=HCH



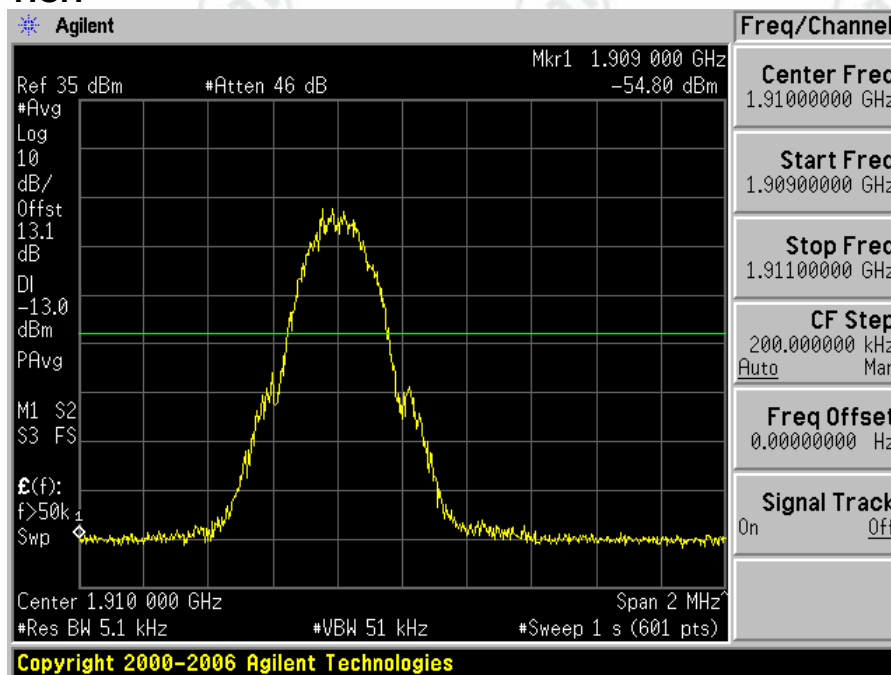
Test Band=GSM1900

Test Mode=GSM/TM1

Test Channel=LCH

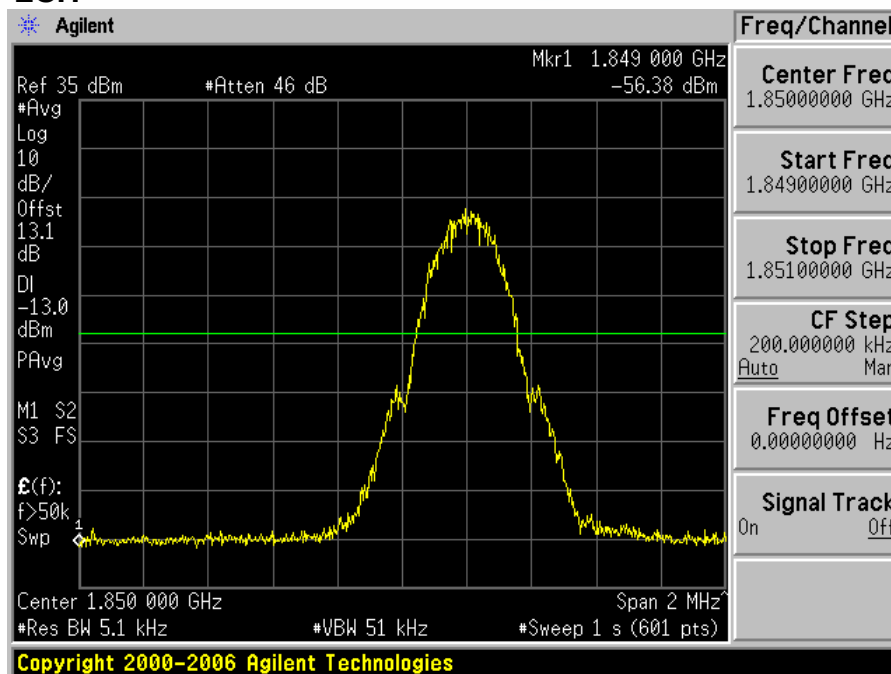


Test Channel=HCH

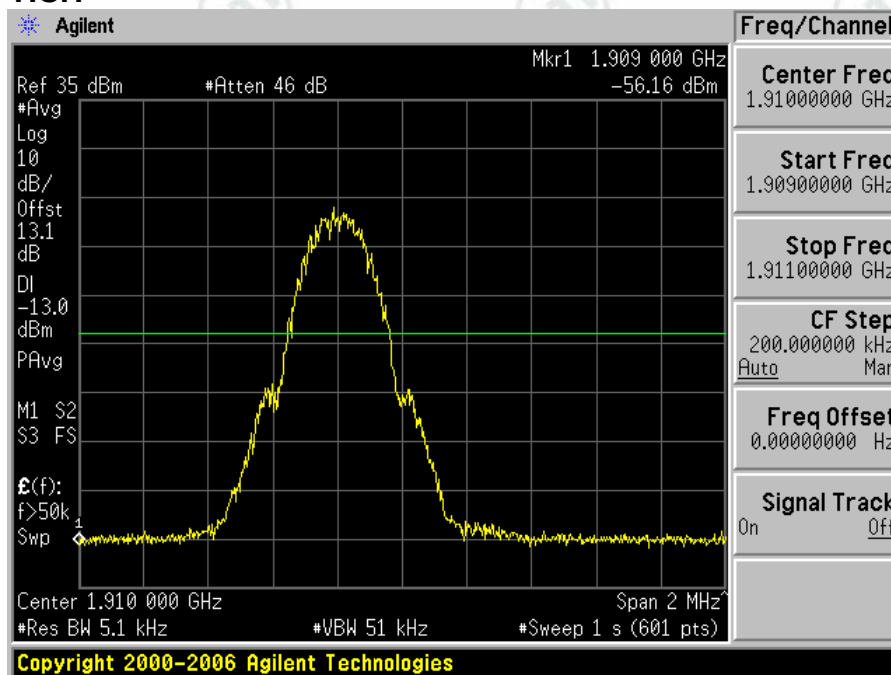


Test Mode=GSM/TM2

Test Channel=LCH



Test Channel=HCH



For WCDMA

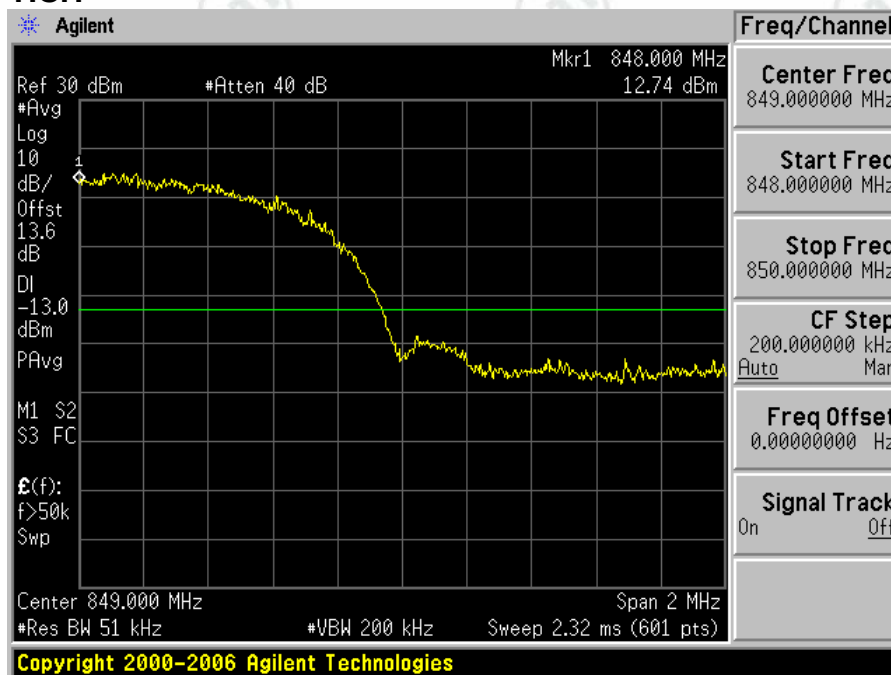
Test Band=WCDMA850

Test Mode=UMTS/TM1

Test Channel=LCH



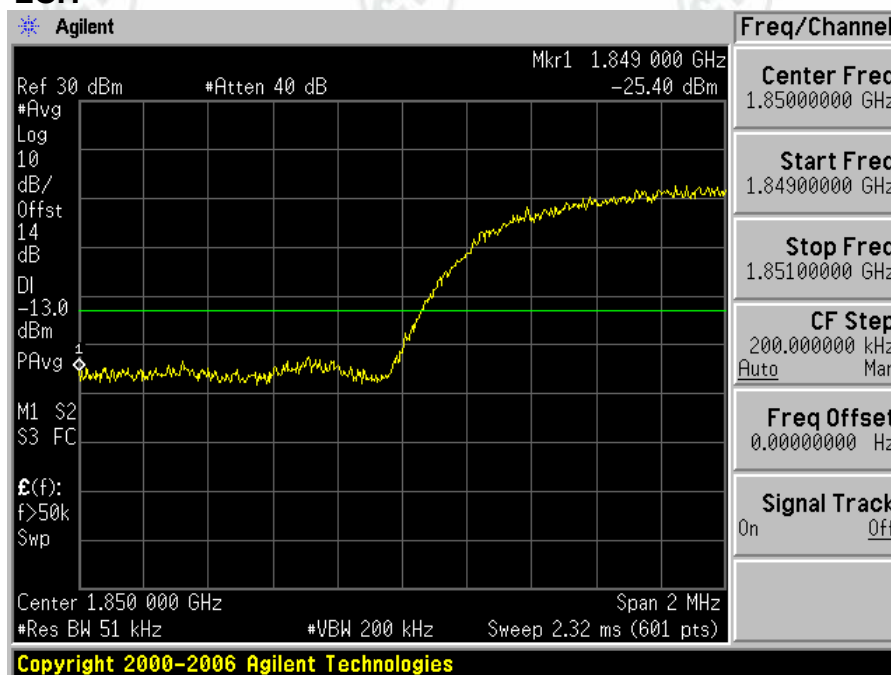
Test Channel=HCH



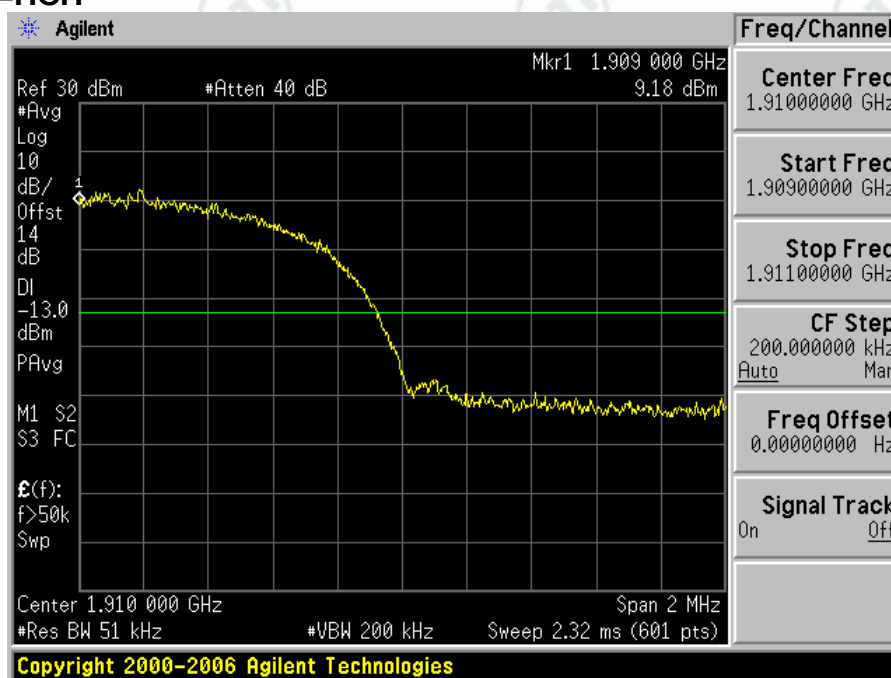
Test Band=WCDMA1900

Test Mode=UMTSTM1

Test Channel=LCH



Test Channel=HCH



Appendix E) Spurious Emission at Antenna Terminal

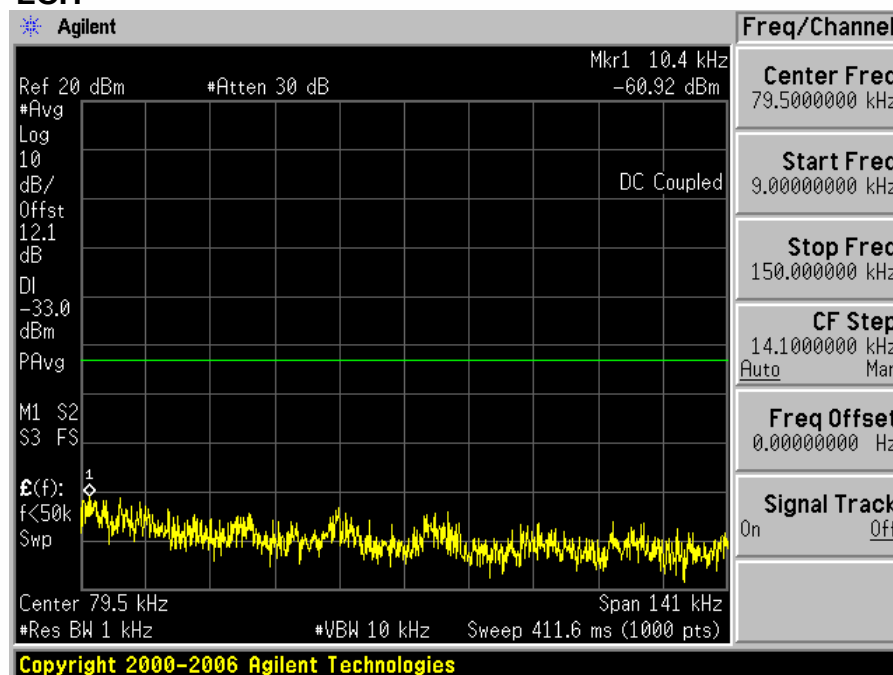
Test Requirement:	Part 2.1051/Part 2.1057 and RSS-132 Clause 4.5/RSS-133 Clause 6.5
Test Method:	TIA-603-D-2010 Clause 2.2.13 and RSS-Gen Clause 4.9
Test Setup:	Refer to section 5 for details
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable, attenuator and Spectrum analyzer, the other end of which was connected to a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel).the equipment operates below 10GHz: to the tenth harmonic of the highest fundamental frequency or to 40GHz.whichever is lower, the resolution bandwidth of the spectrum analyzer was set at 100kHz for spurious emissions below 1 GHz, and 1 MHz for spurious emissions above 1GHz.the video bandwidth of the spectrum analyzer was set at thrice the resolution bandwidth. Detector Mode was set to mean or average power.
Instruments Used:	Refer to section 7 for details
Limit:	Attenuated at least $43+10\log(P)$
Test Results:	Pass

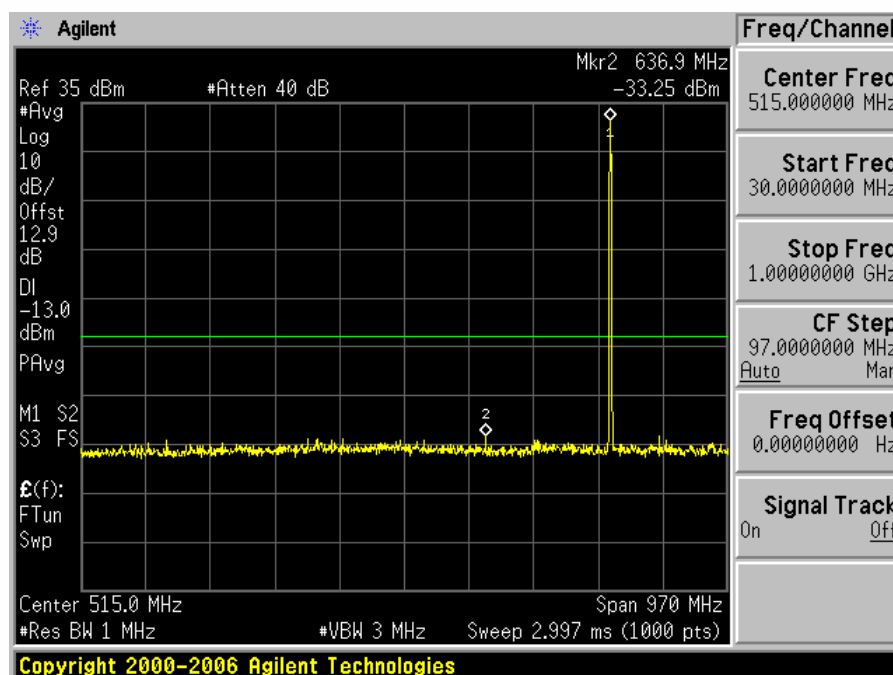
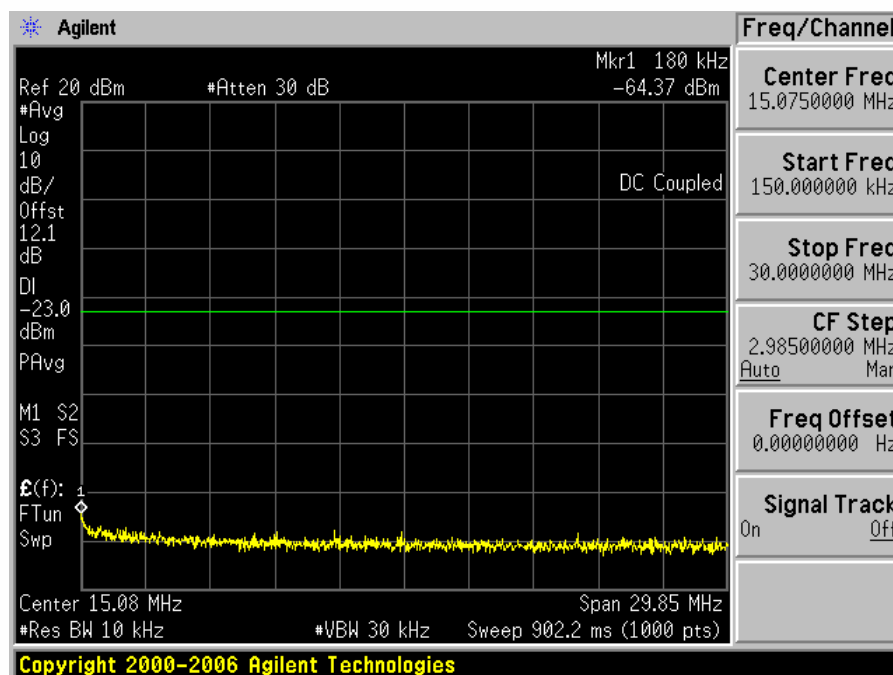
For GSM

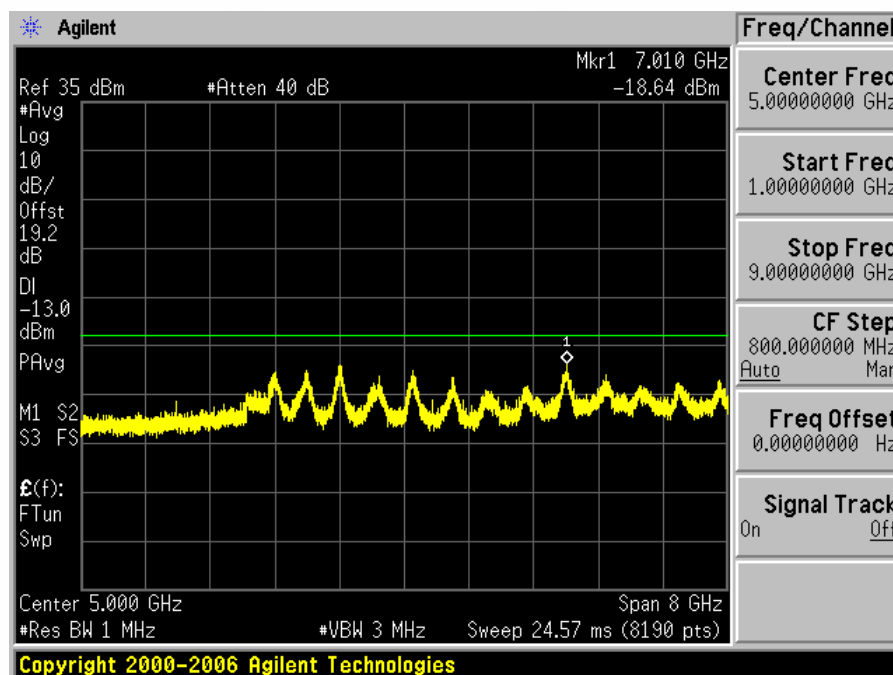
Test Band=GSM850

Test Mode=GSM/TM1

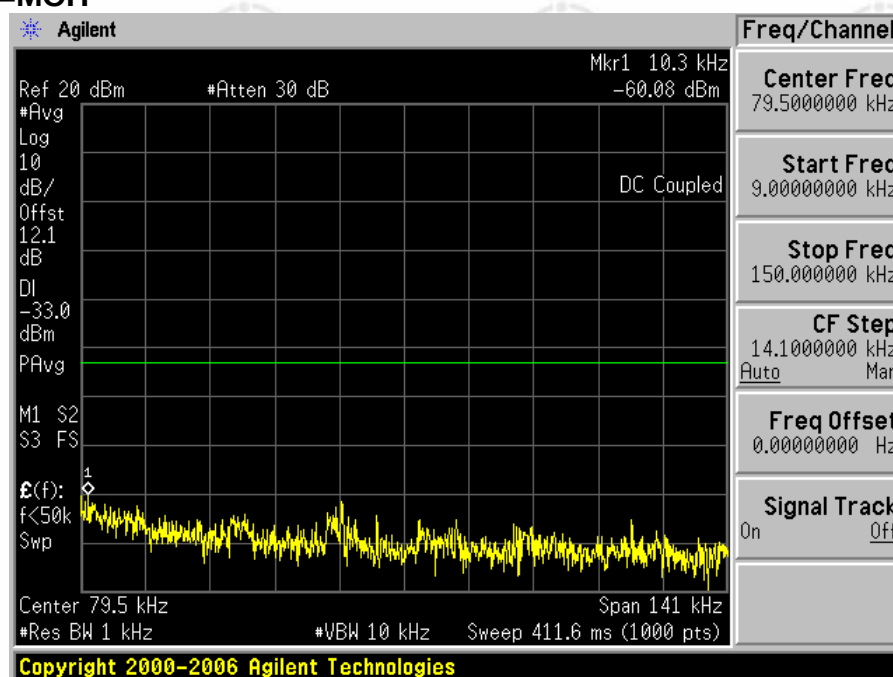
Test Channel=LCH

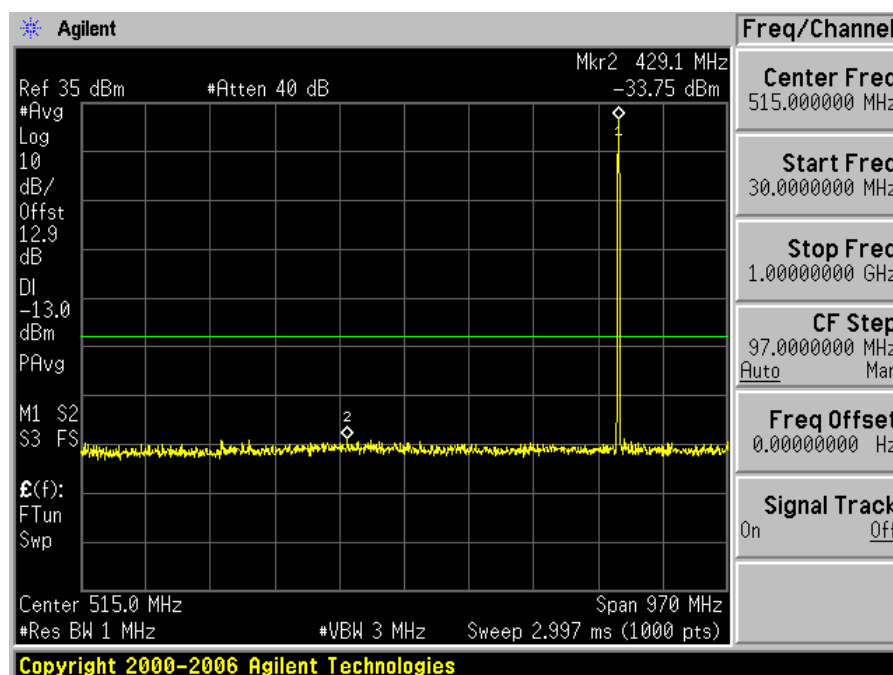
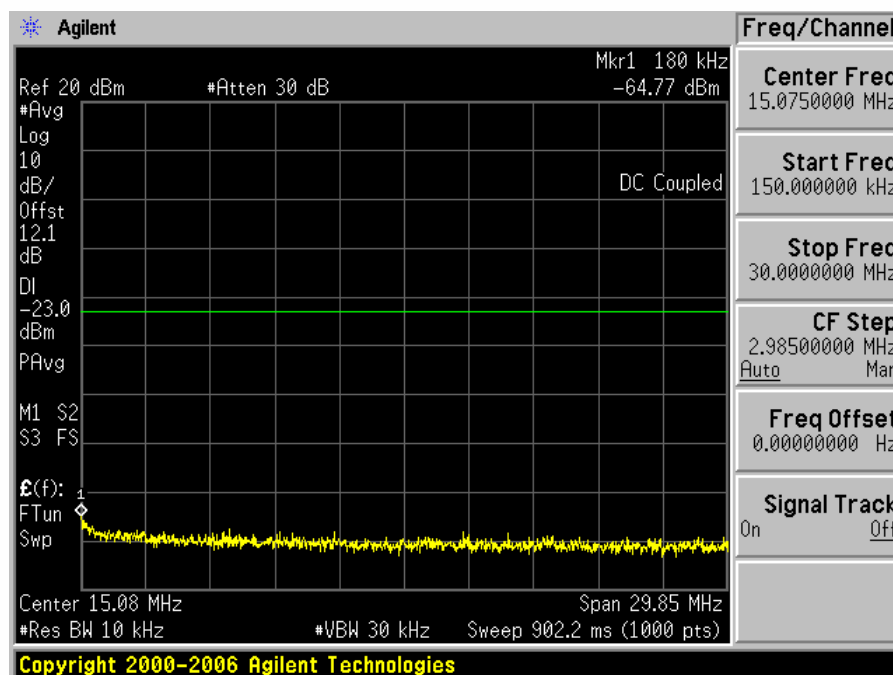


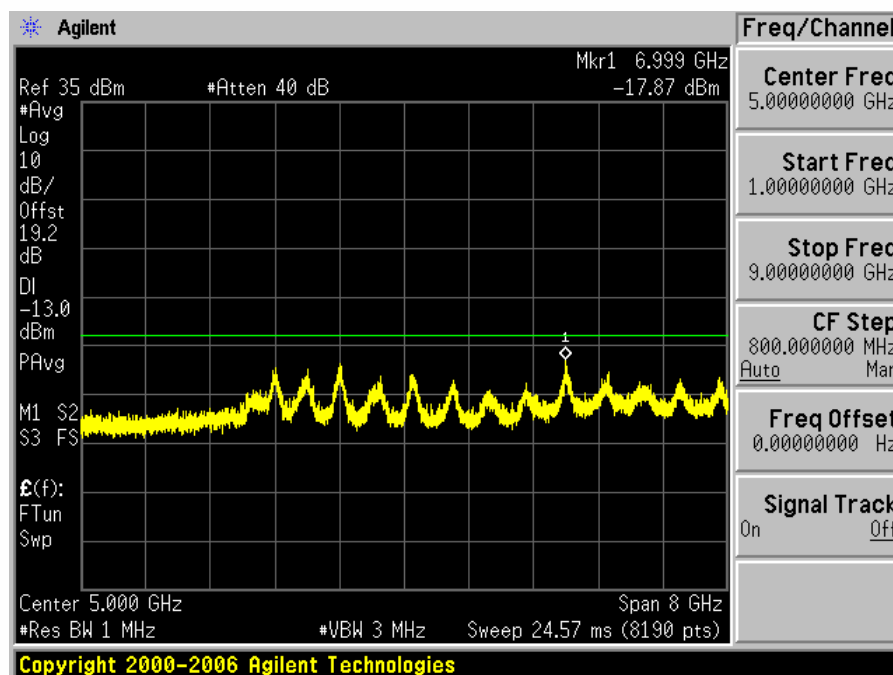




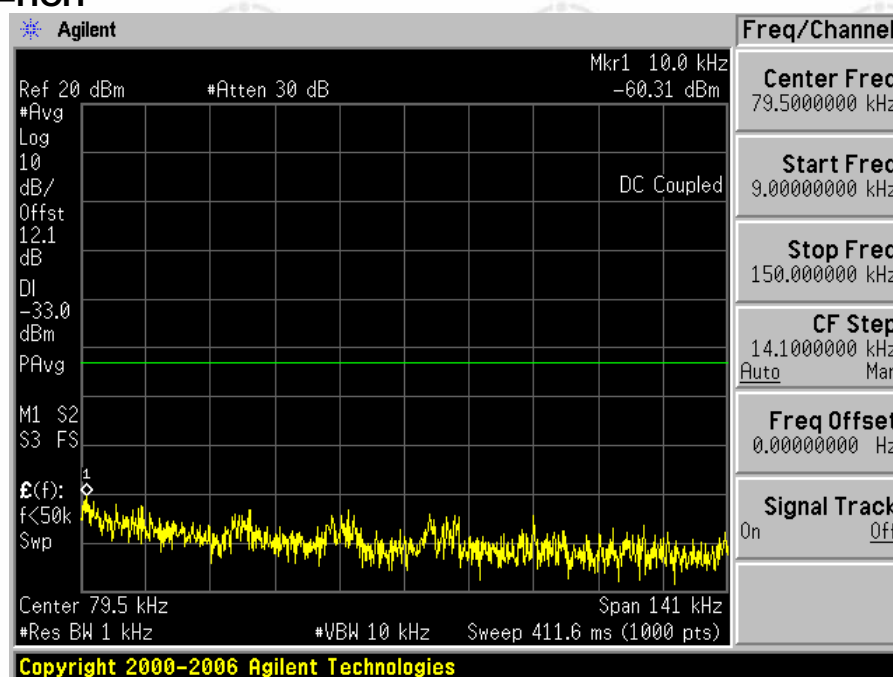
Test Channel=MCH

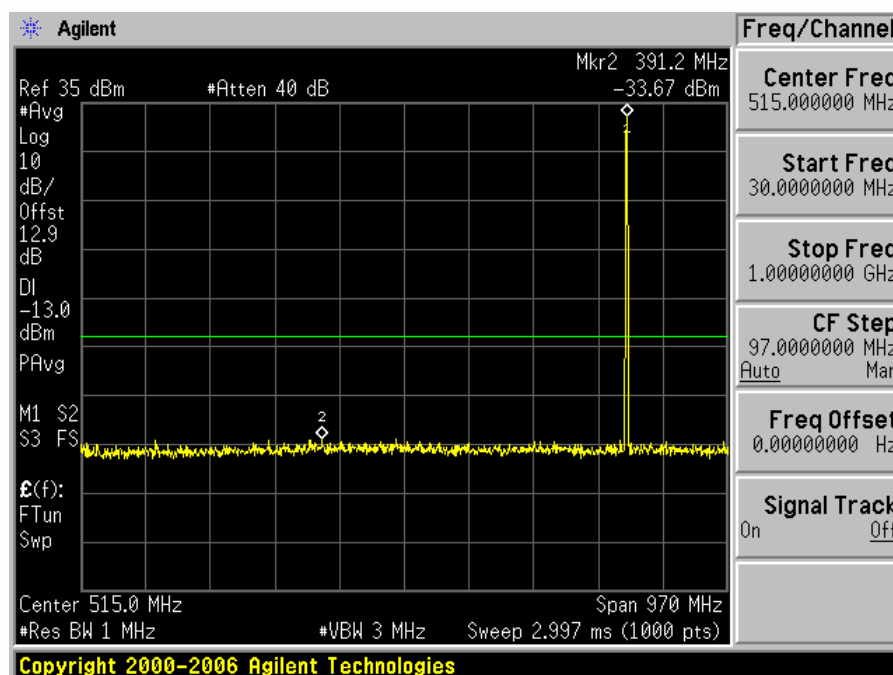
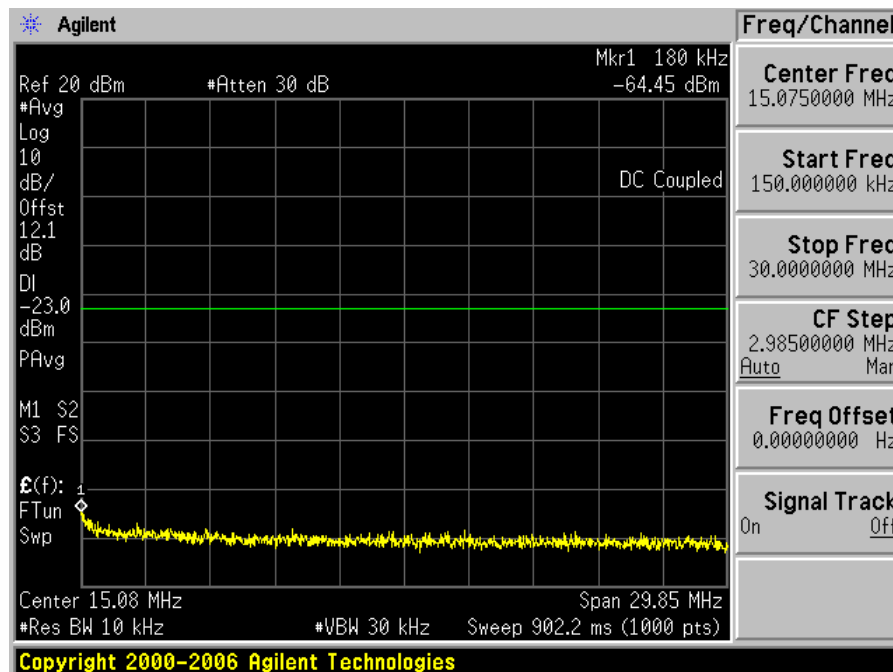


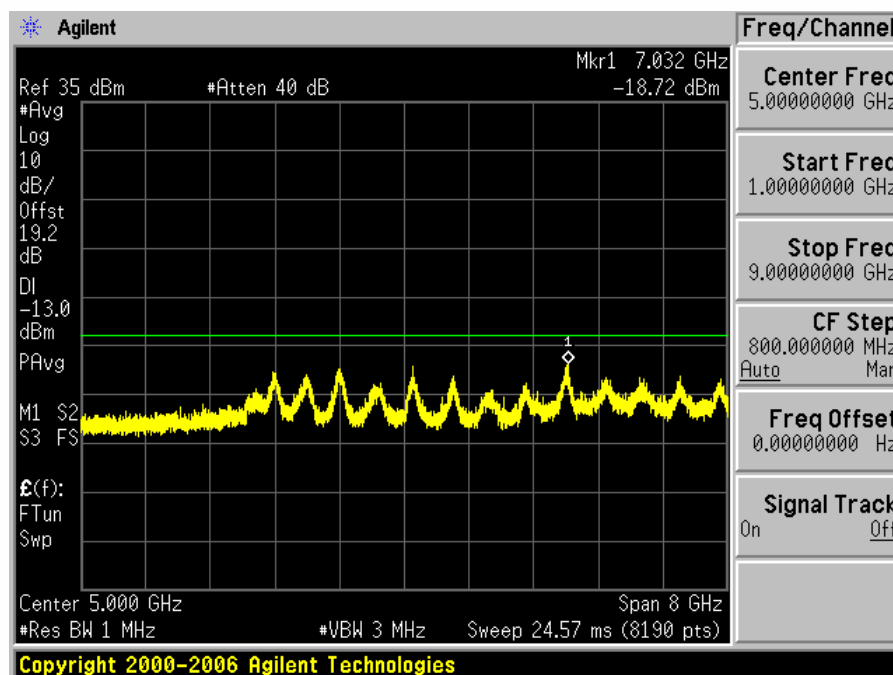




Test Channel=HCH

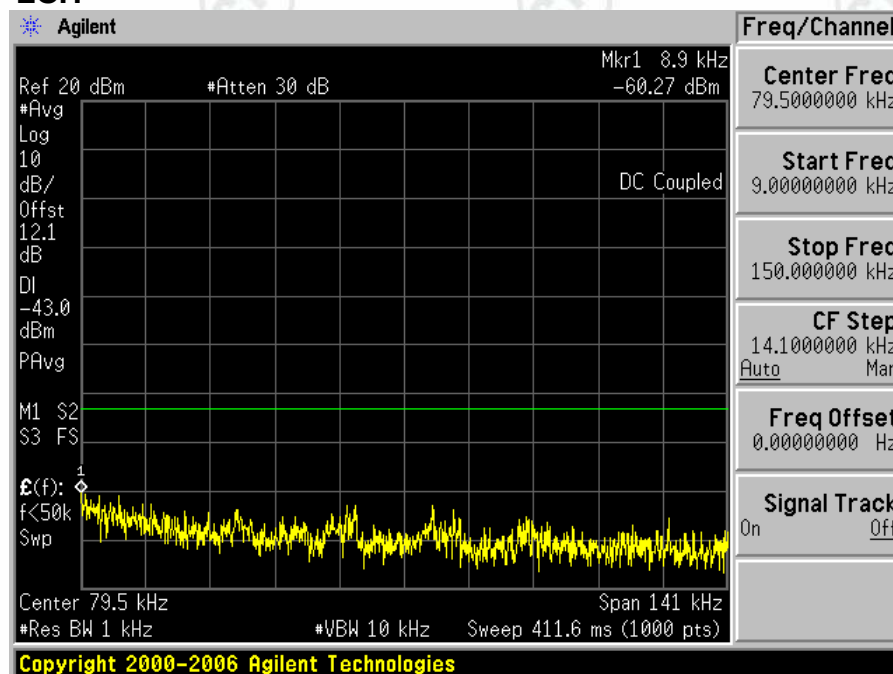


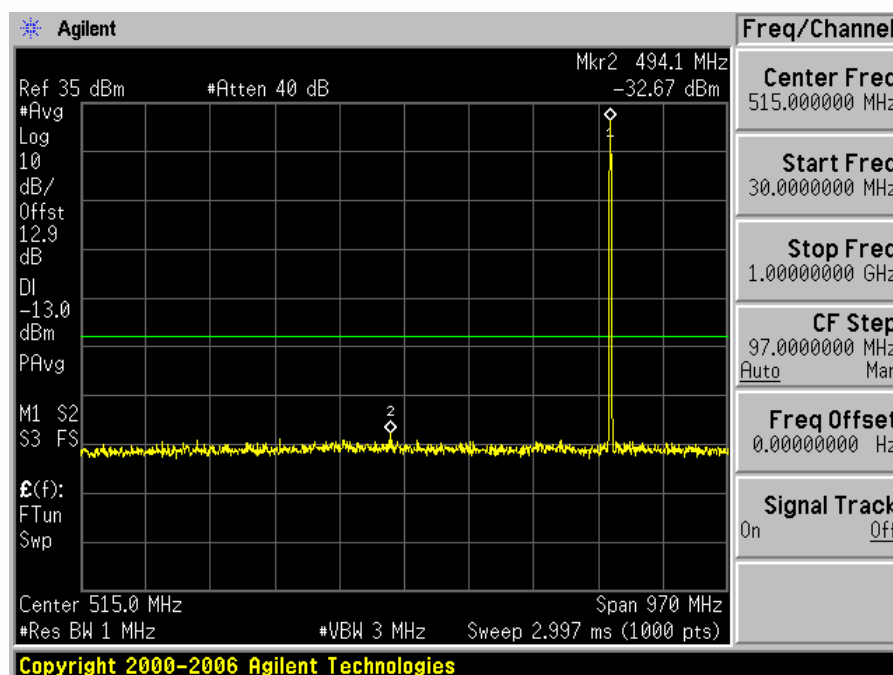
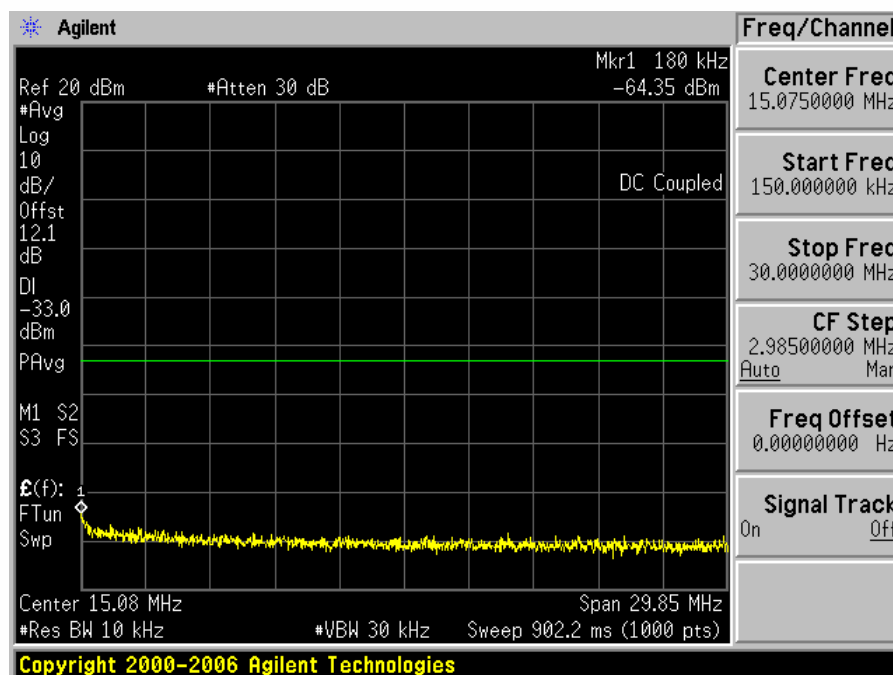


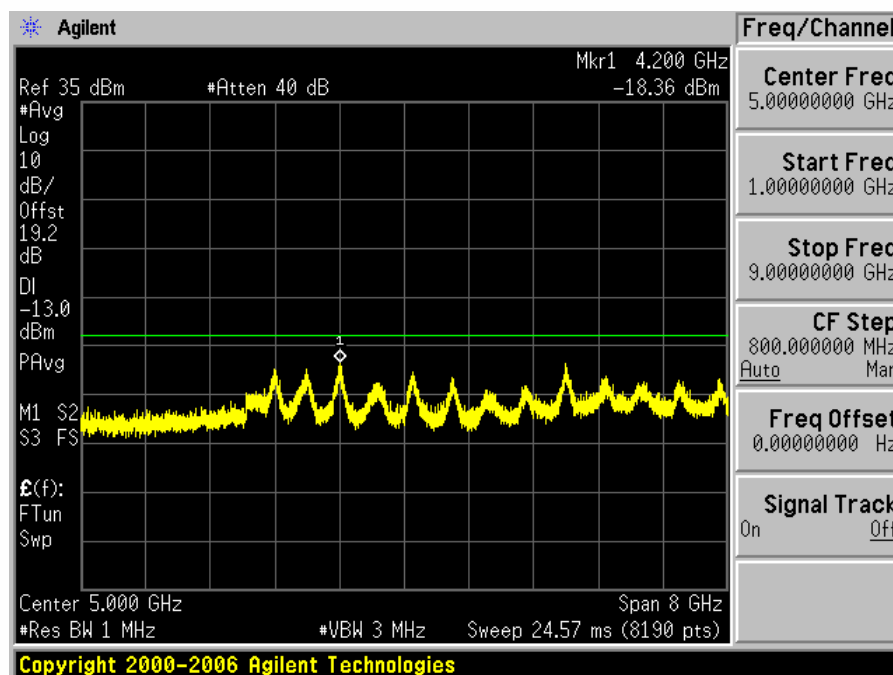


Test Mode=GSM/TM2

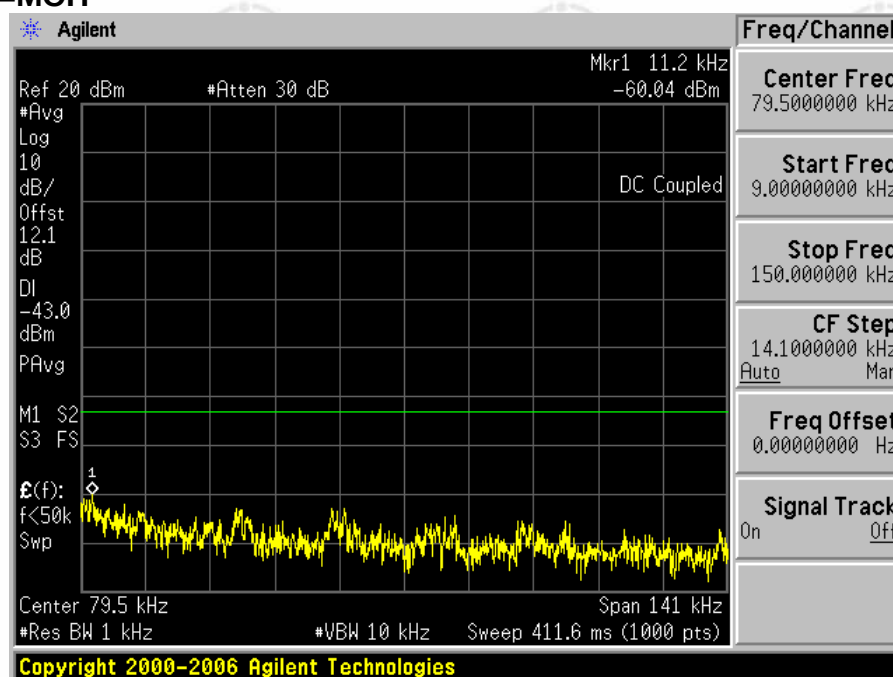
Test Channel=LCH

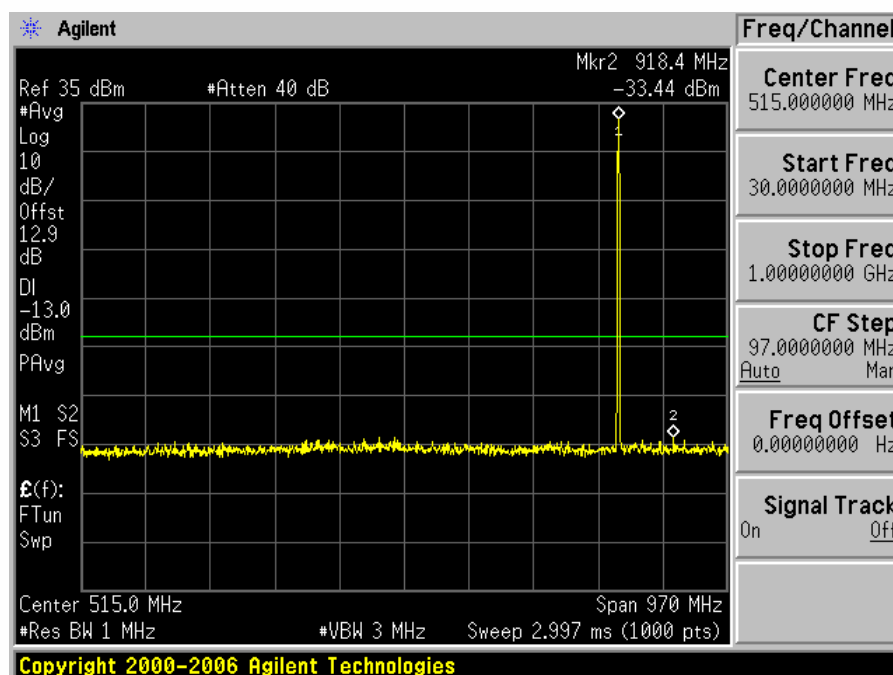
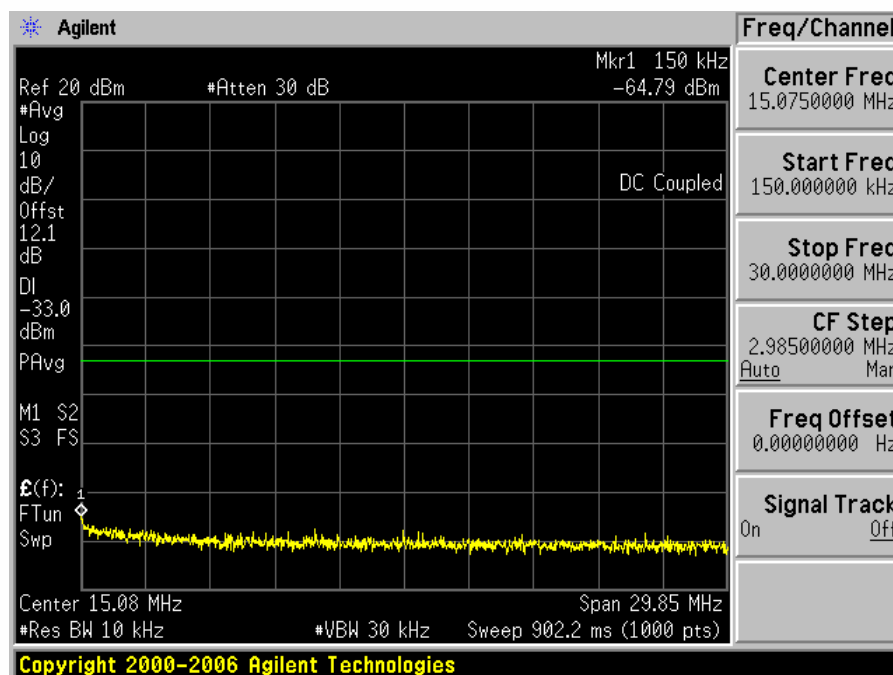


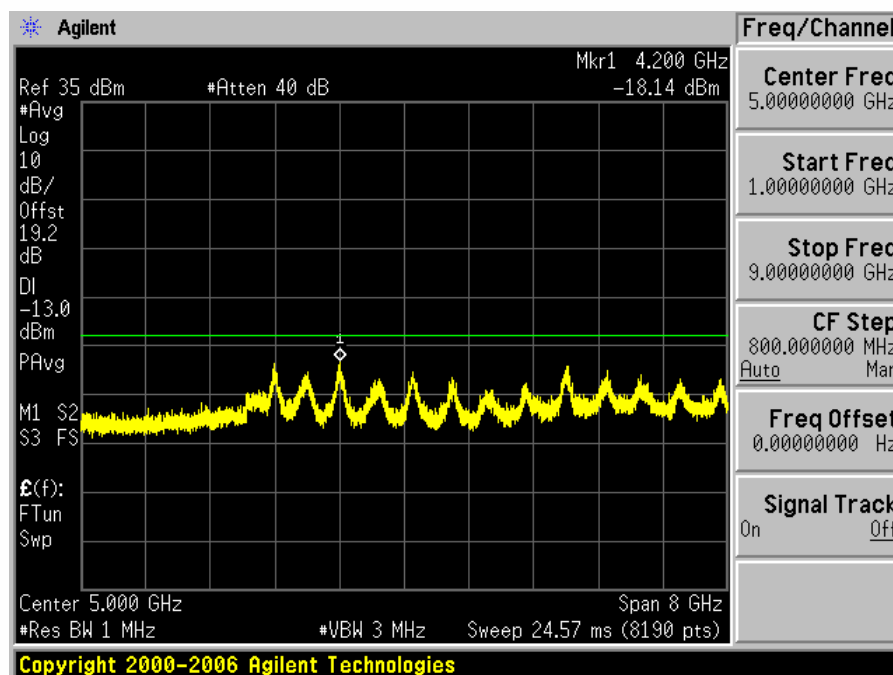




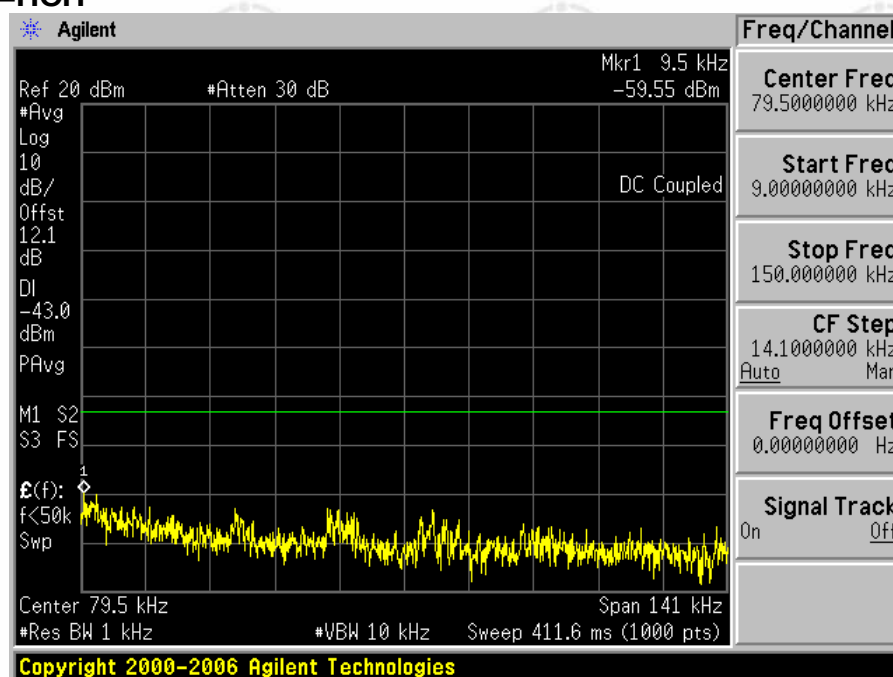
Test Channel=MCH

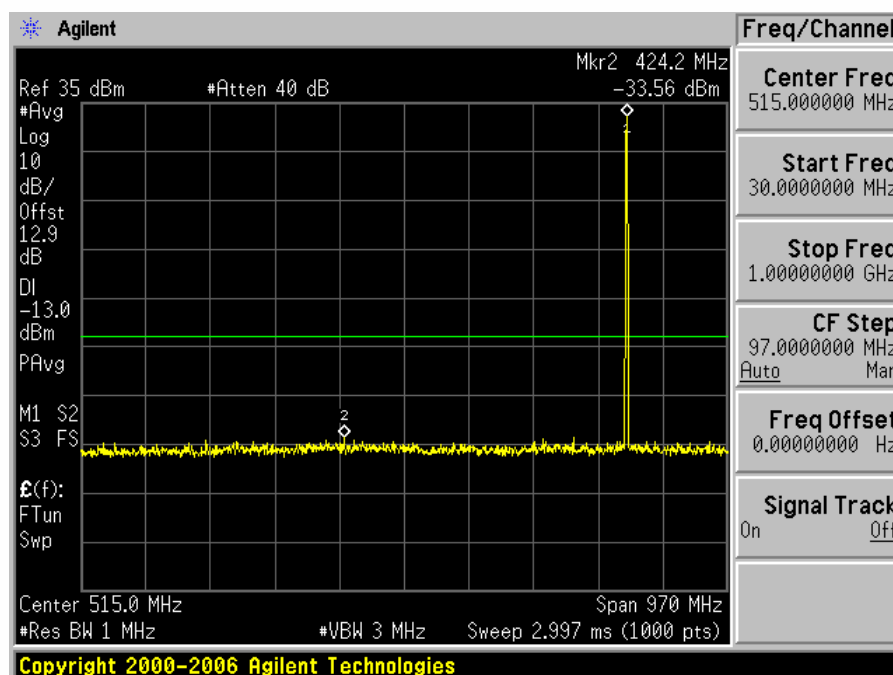
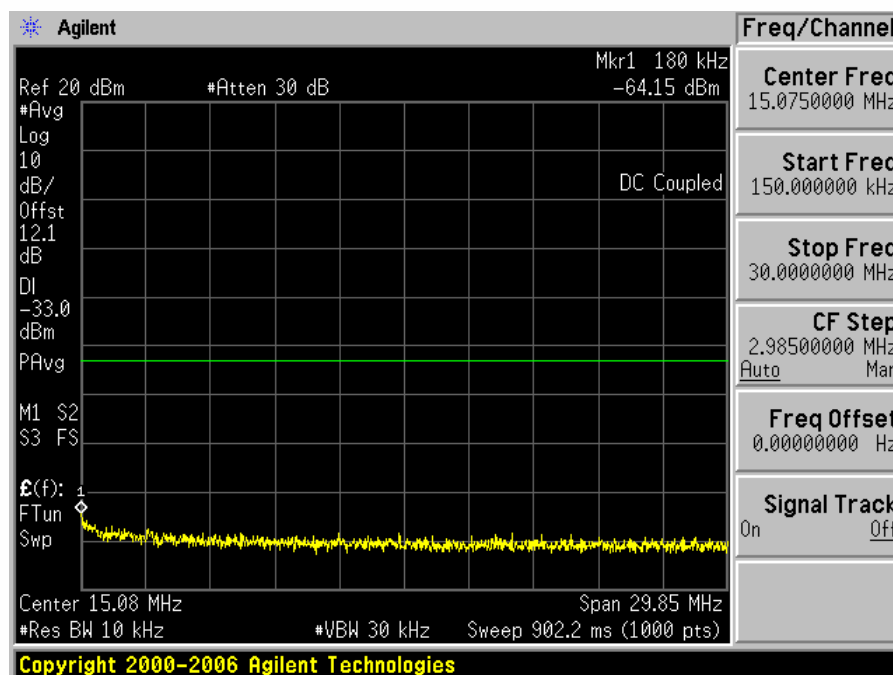


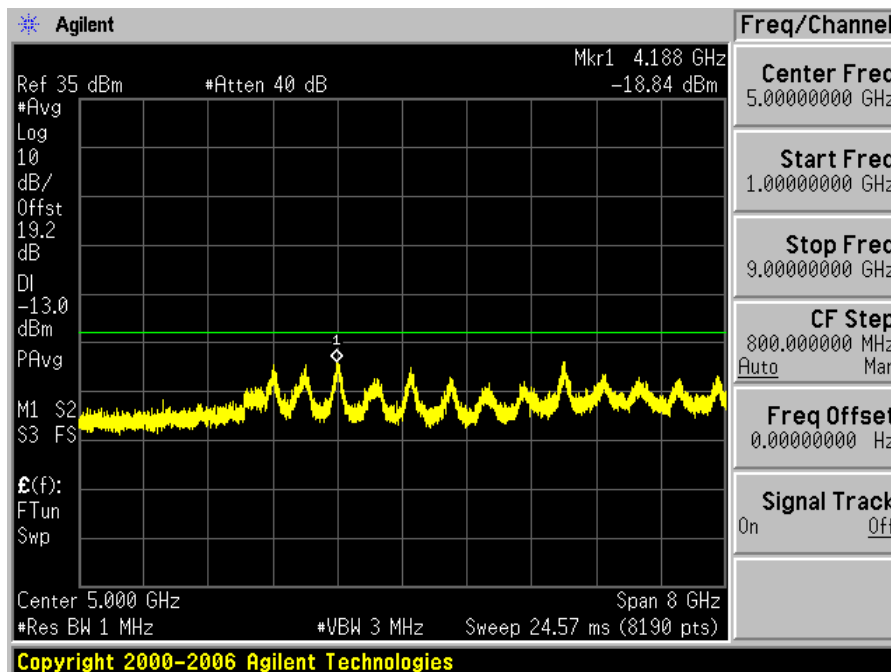




Test Channel=HCH



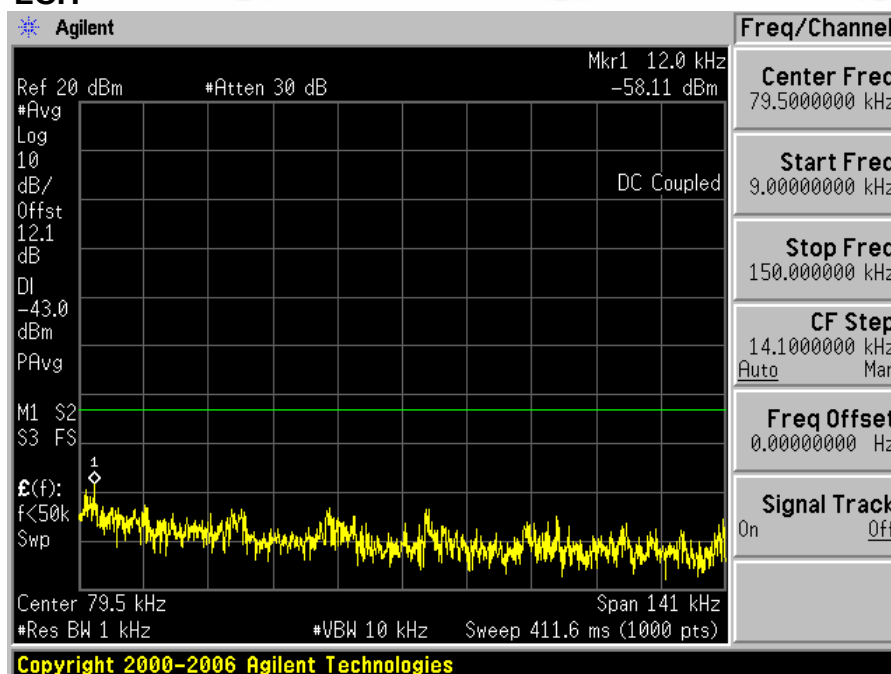


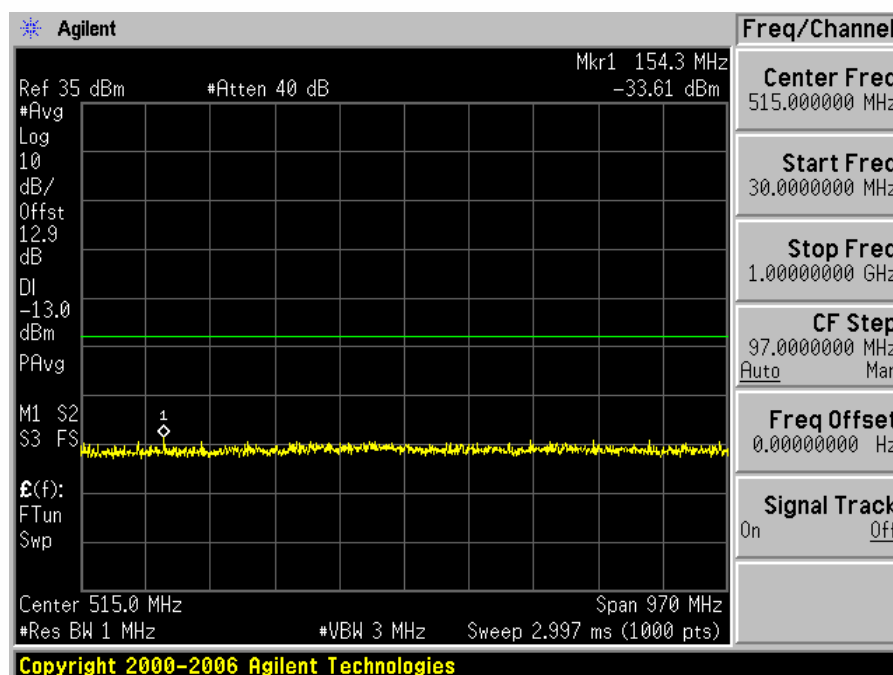
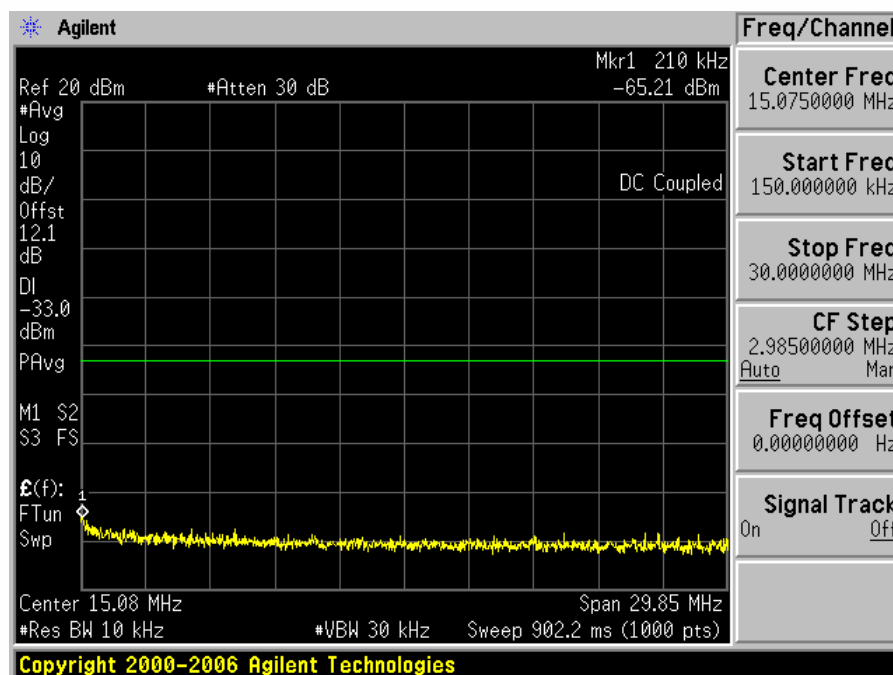


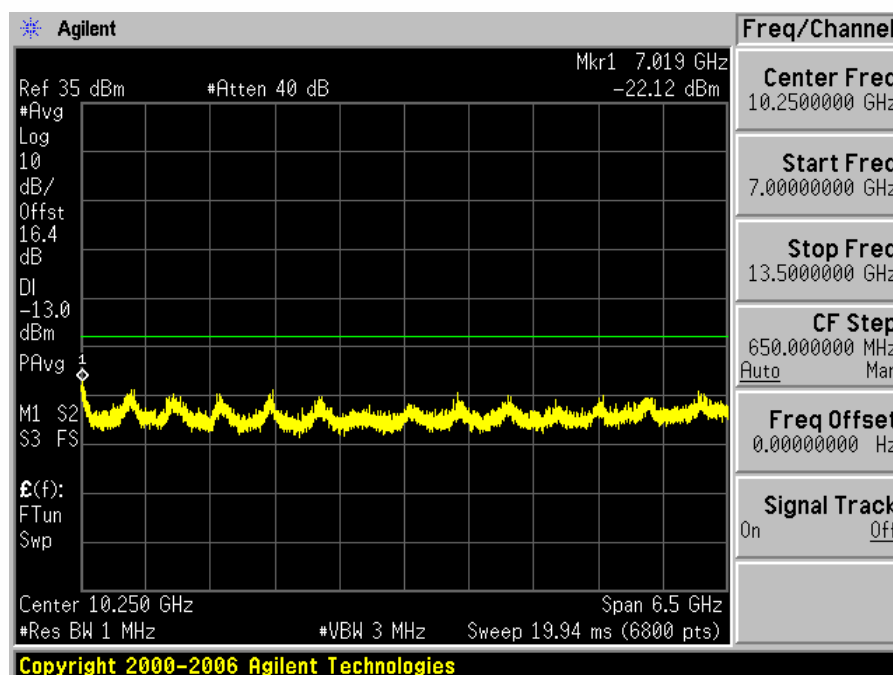
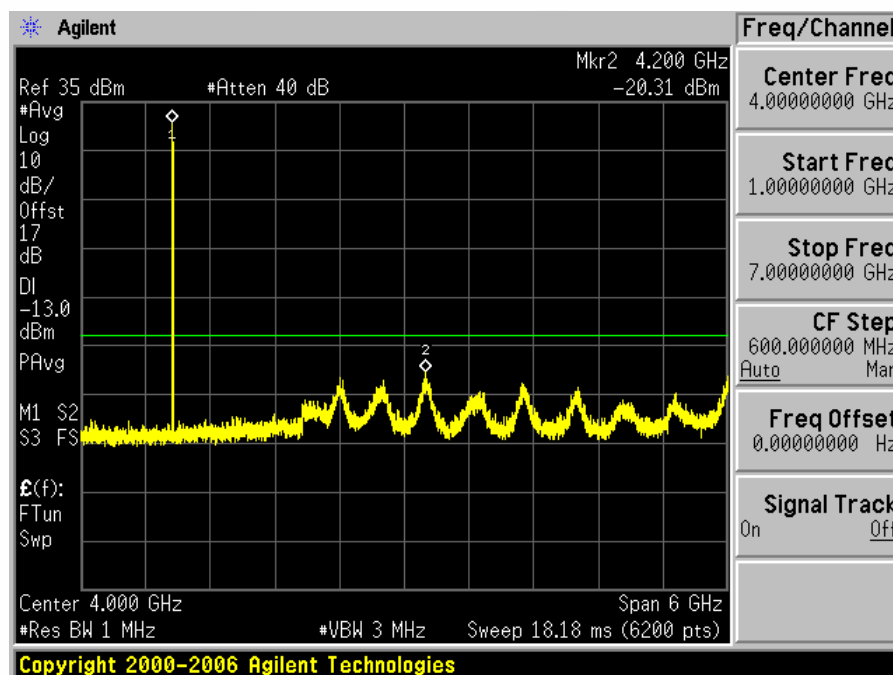
Test Band=GSM1900

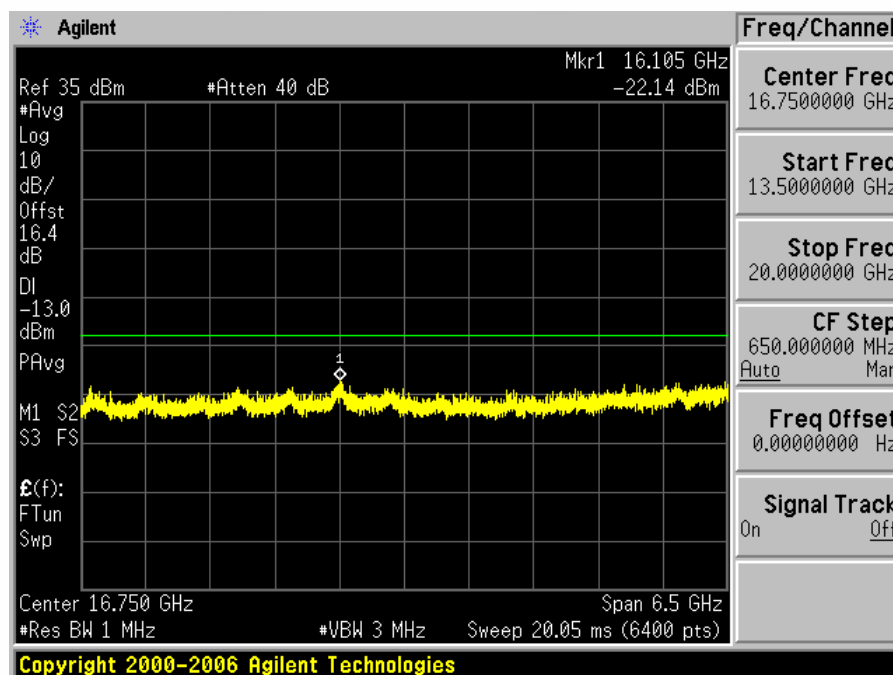
Test Mode=GSM/TM1

Test Channel=LCH

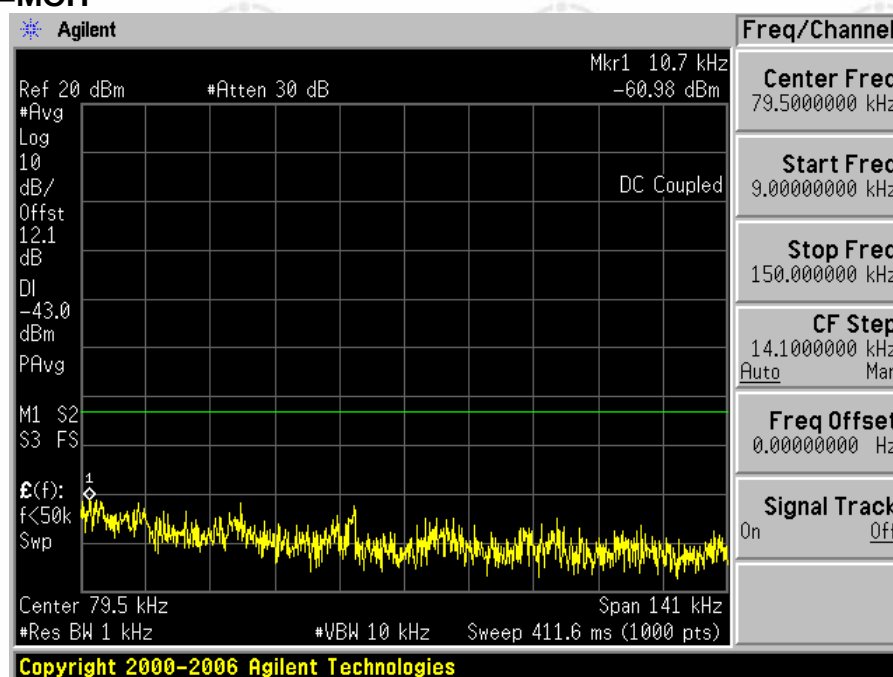


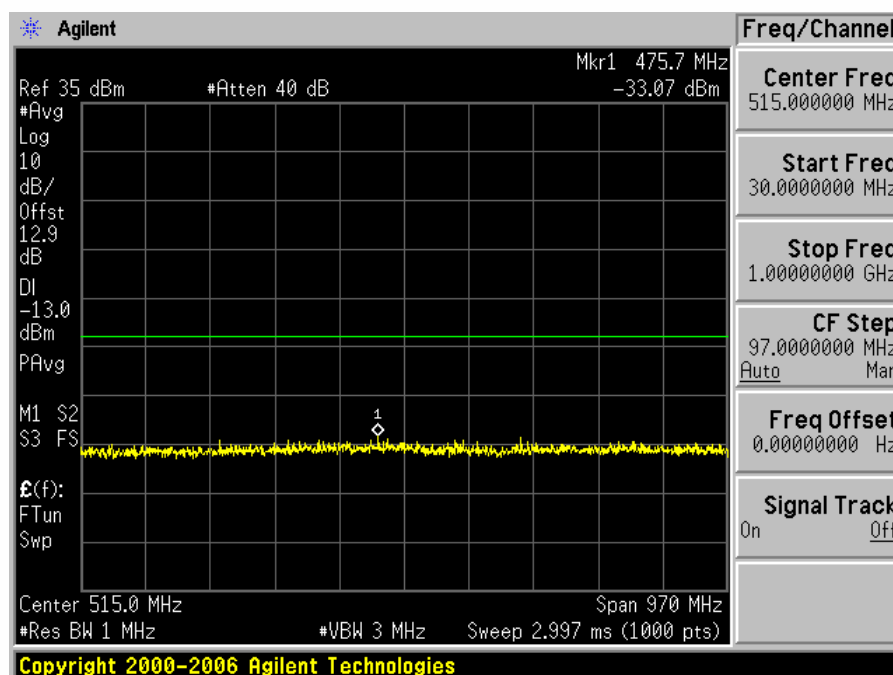
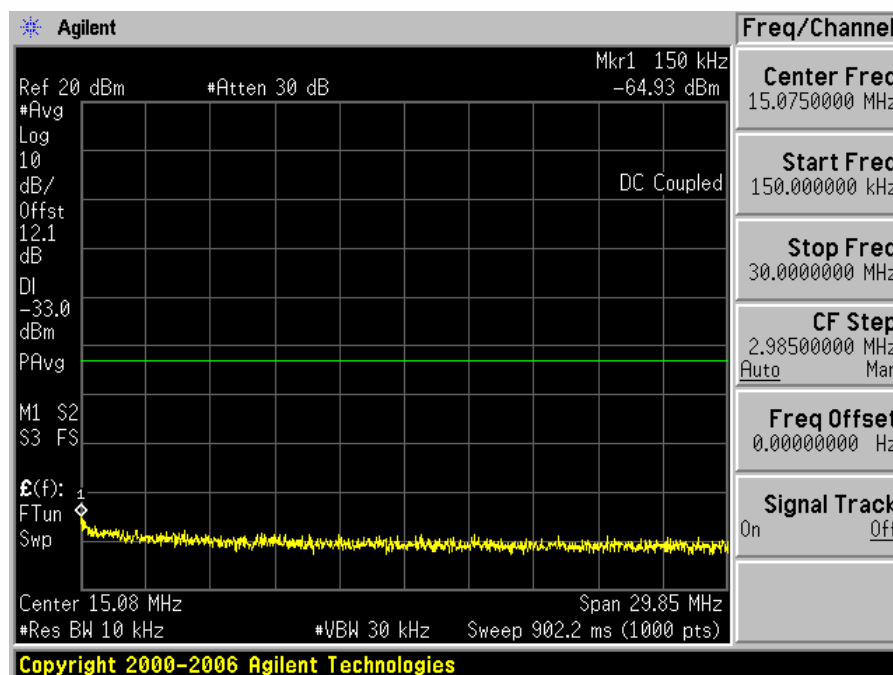


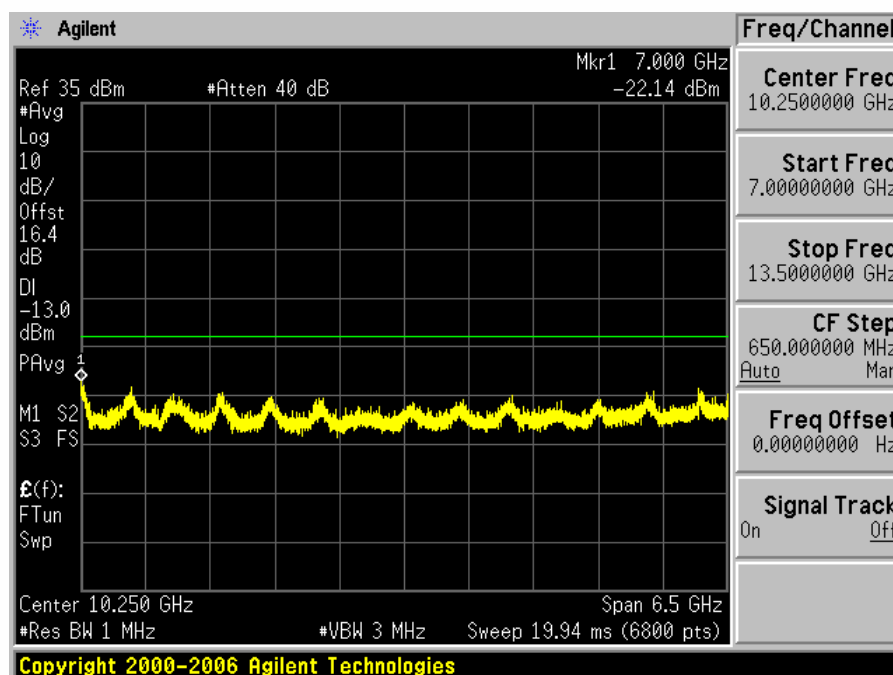
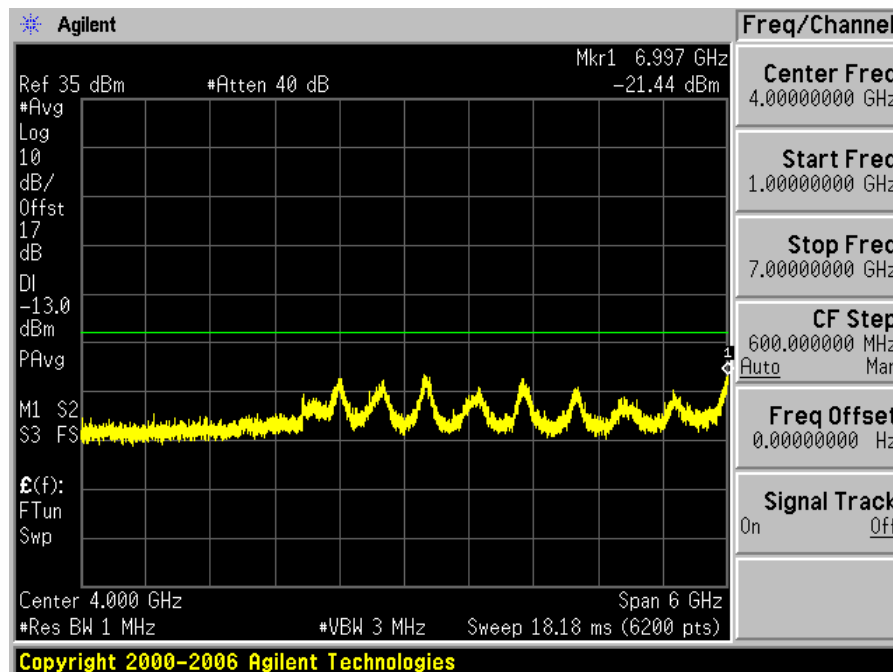


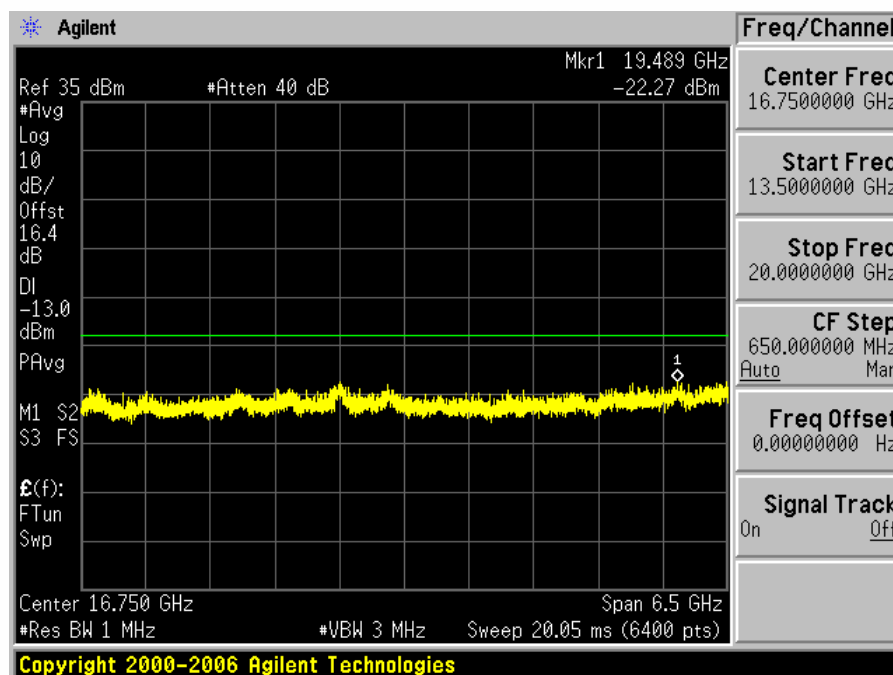


Test Channel=MCH

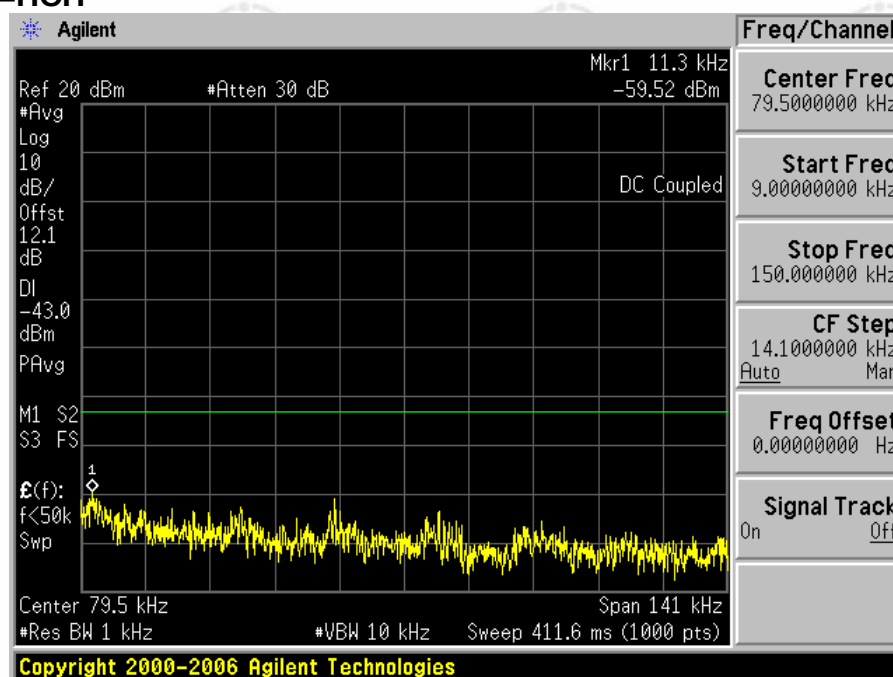


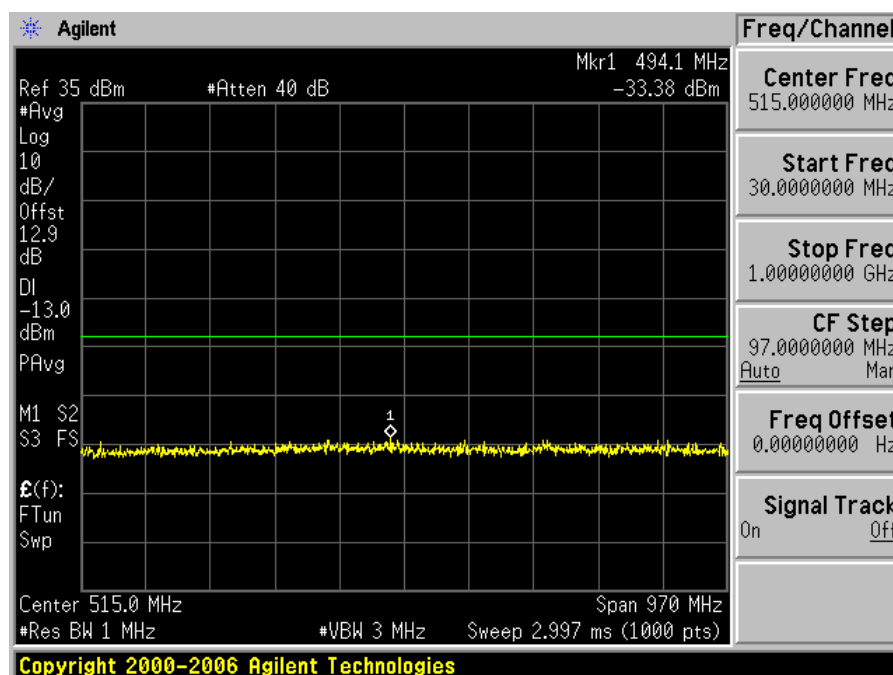
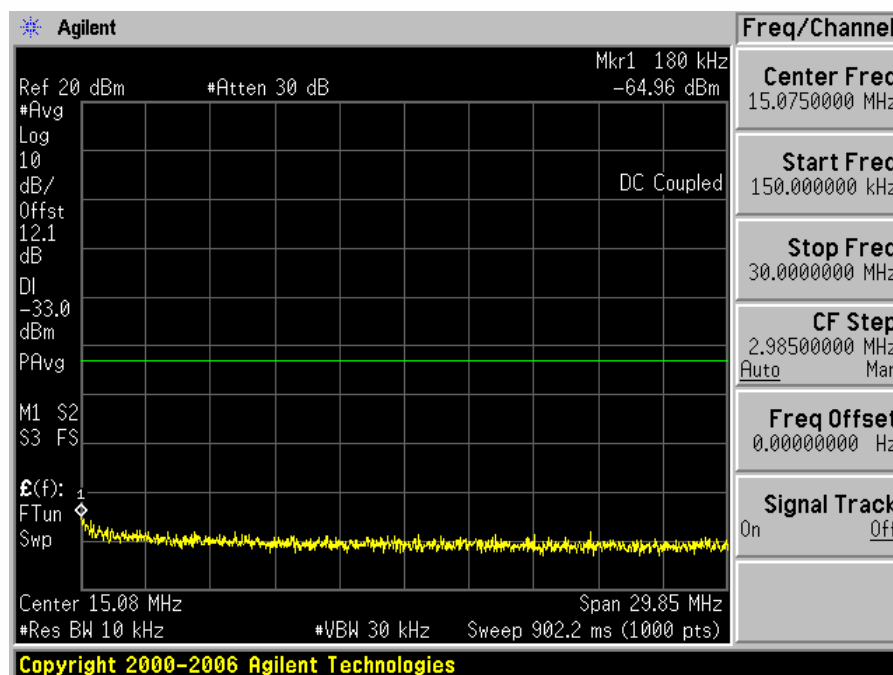


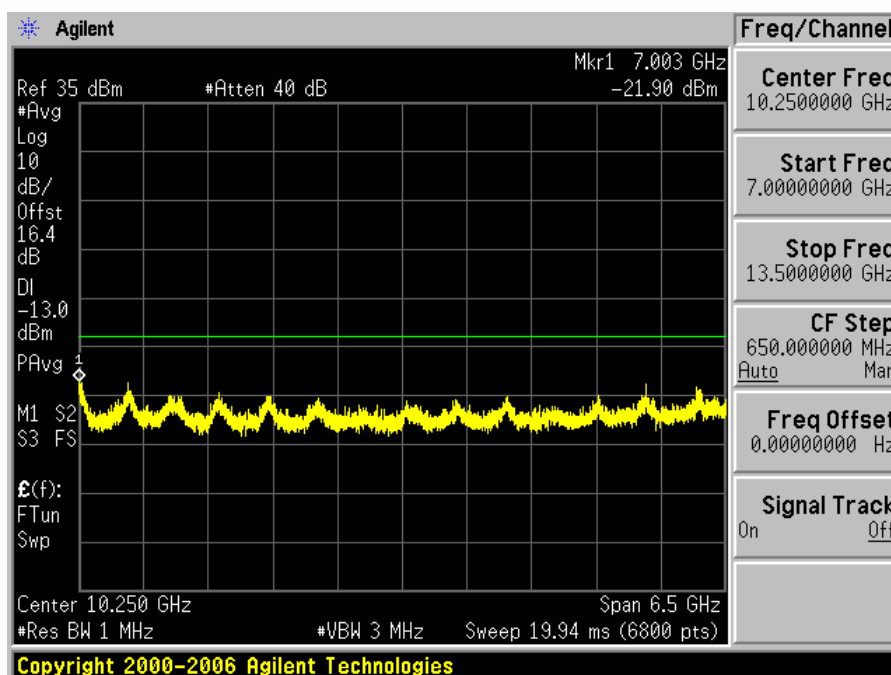
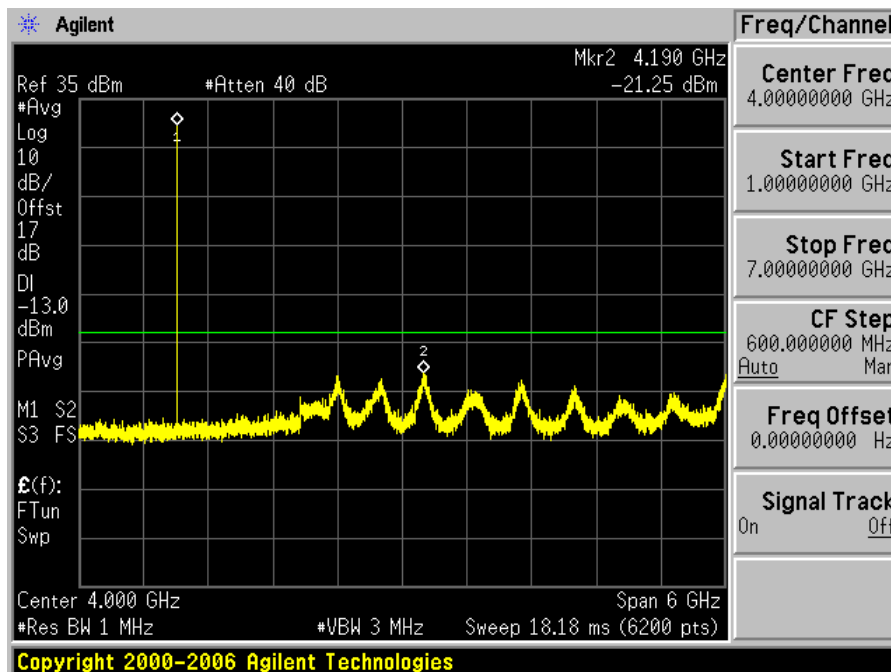


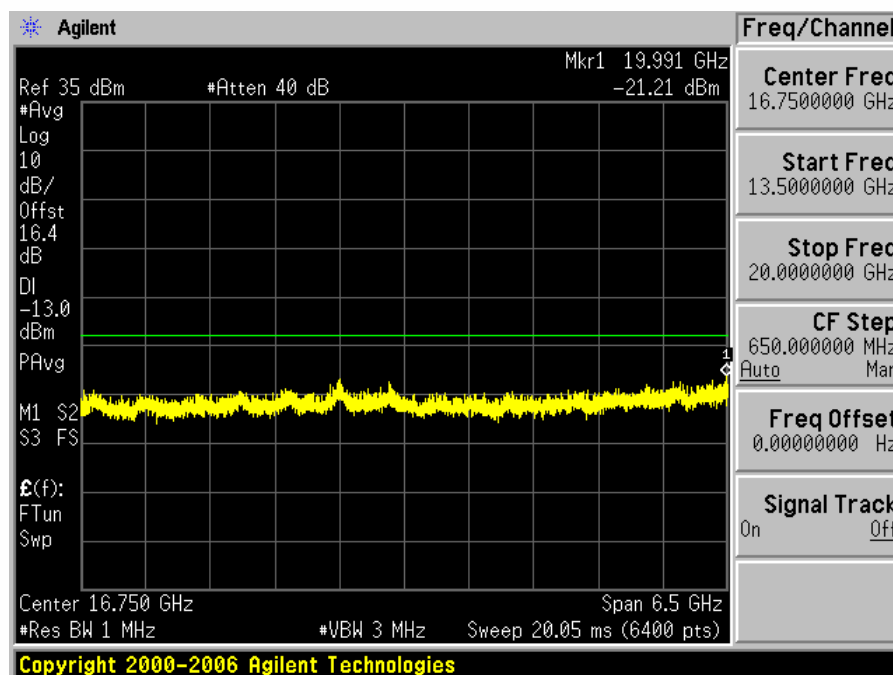


Test Channel=HCH



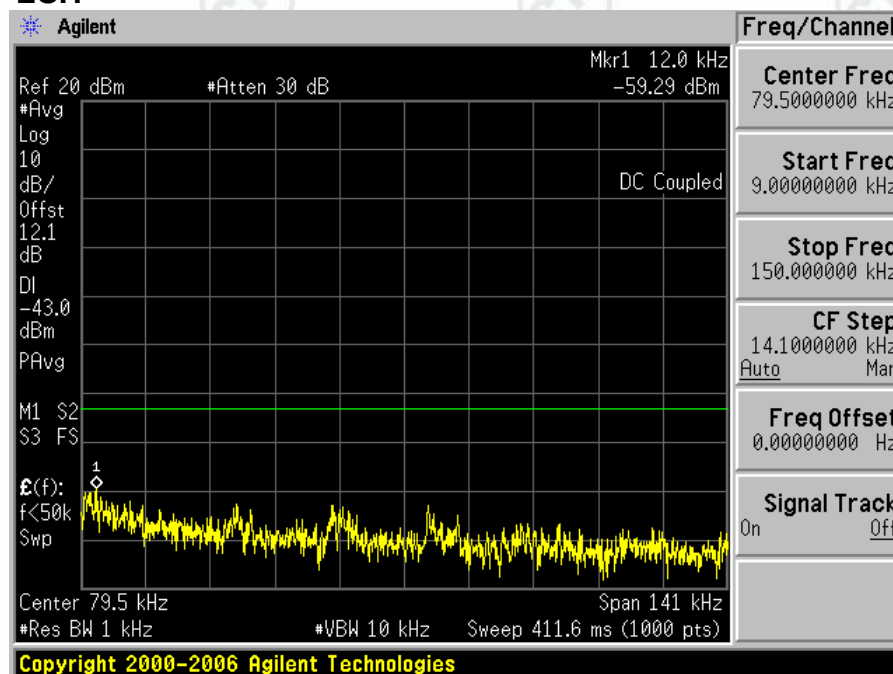


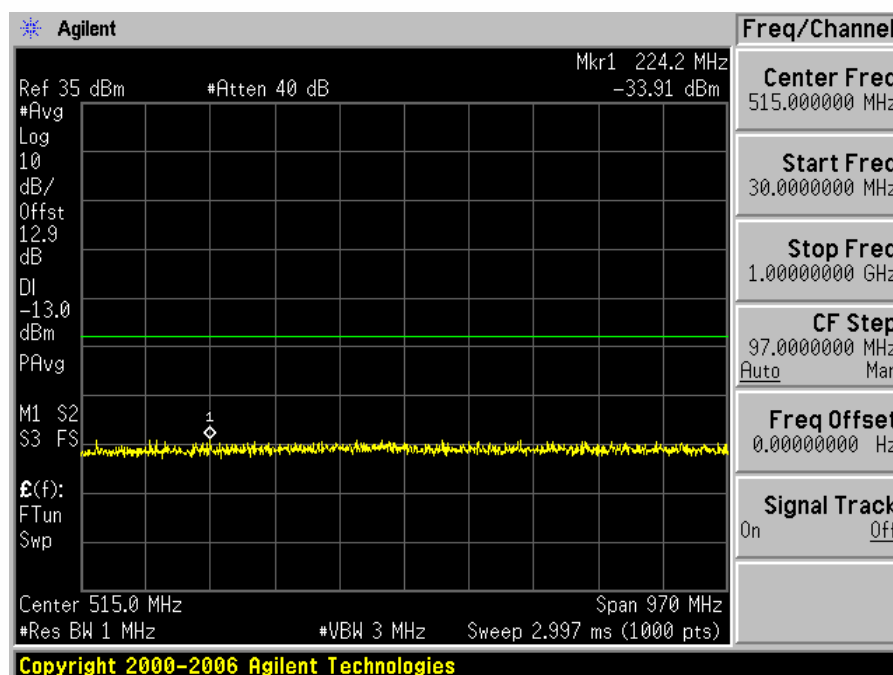
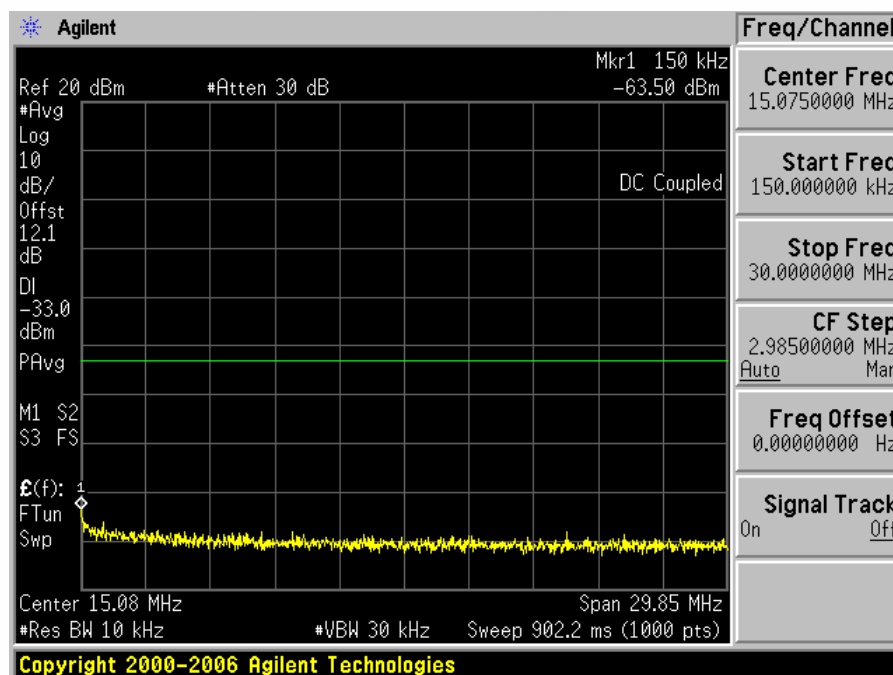


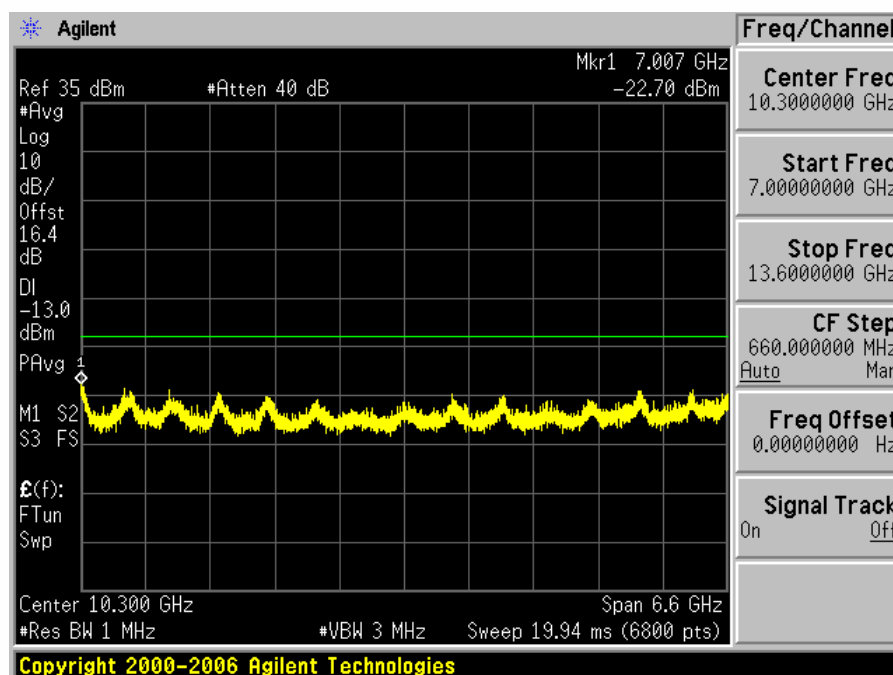
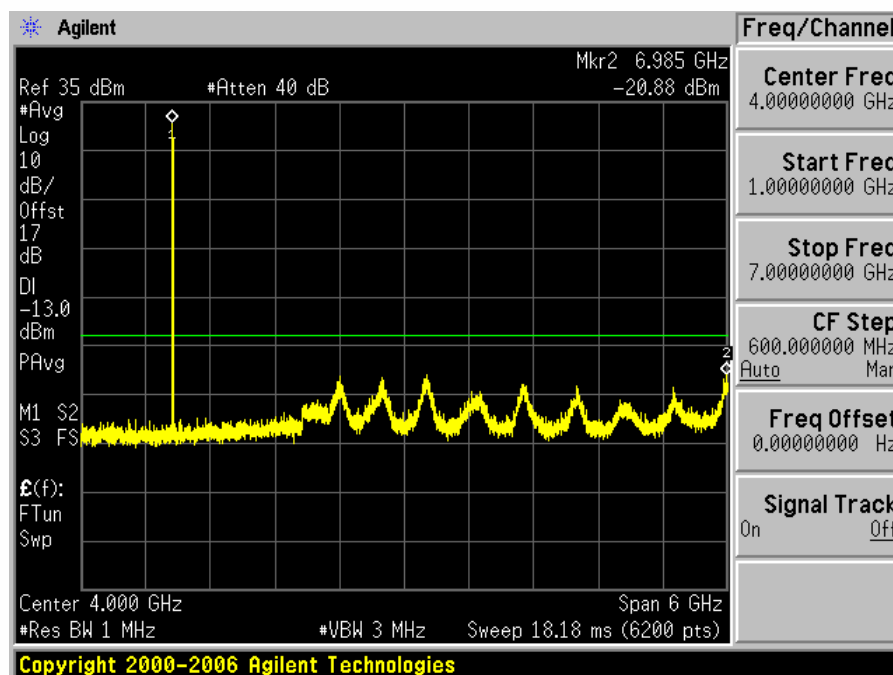


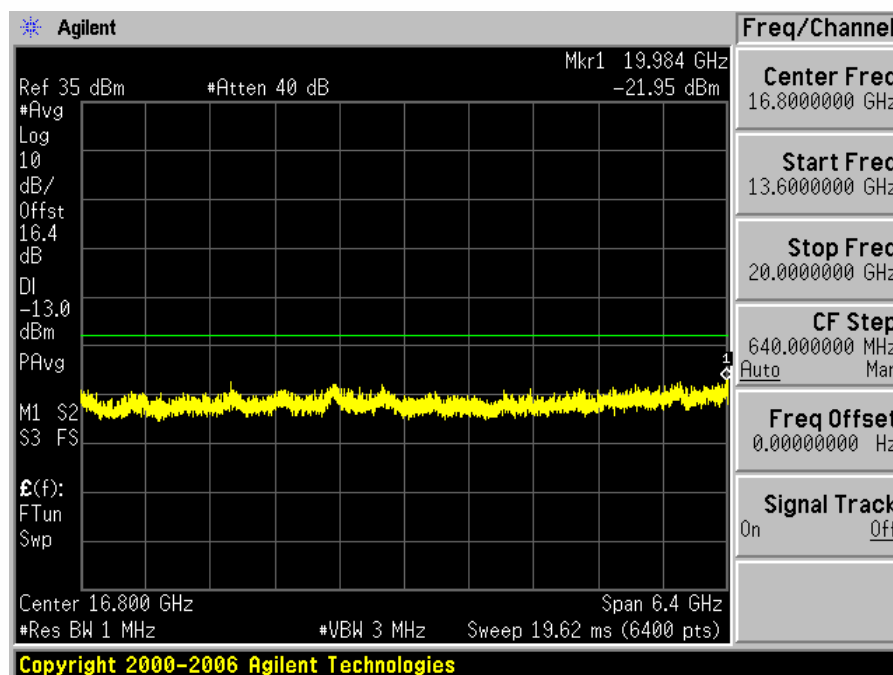
Test Mode=GSM/TM2

Test Channel=LCH

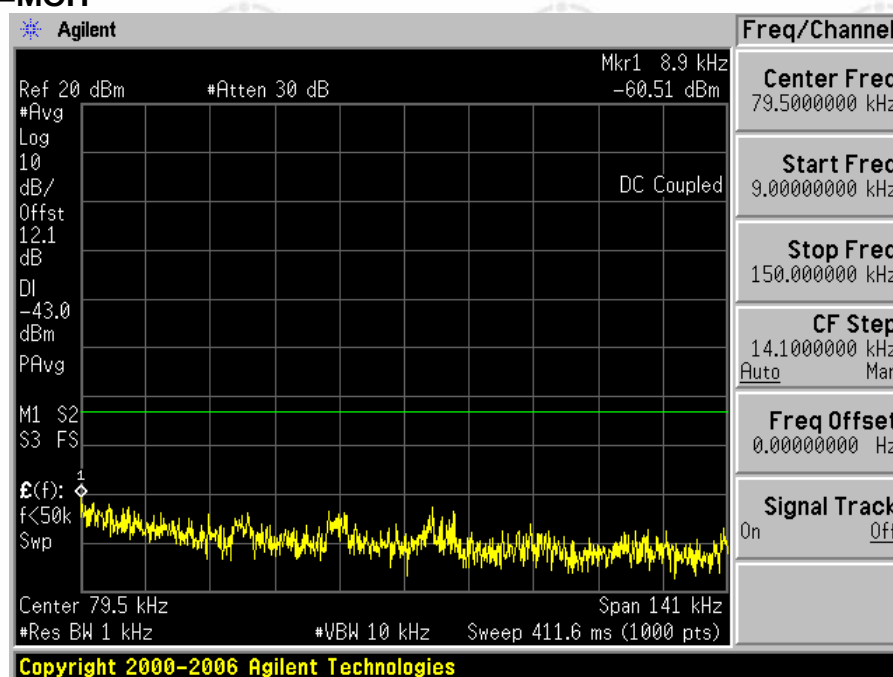


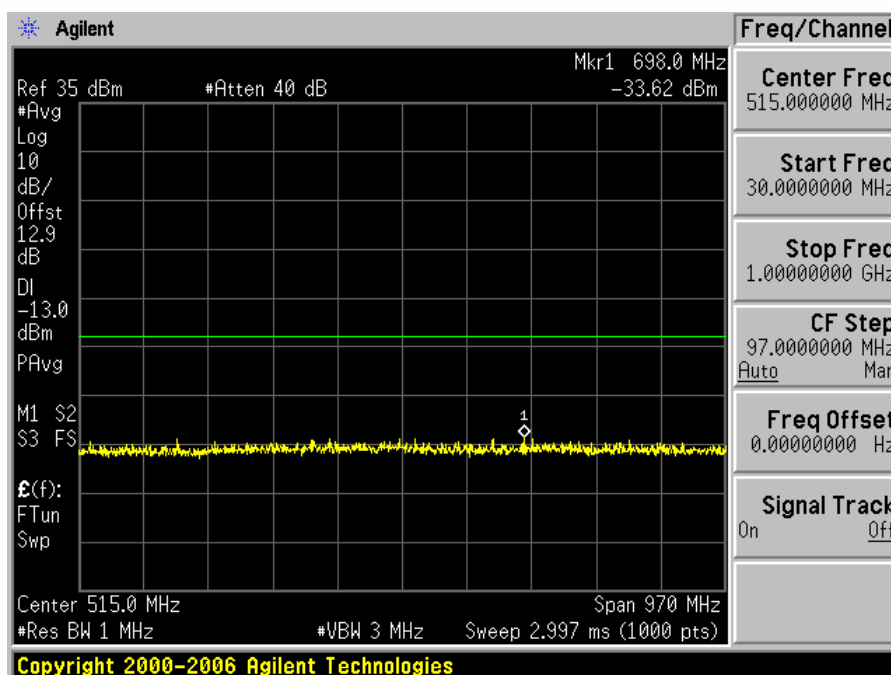
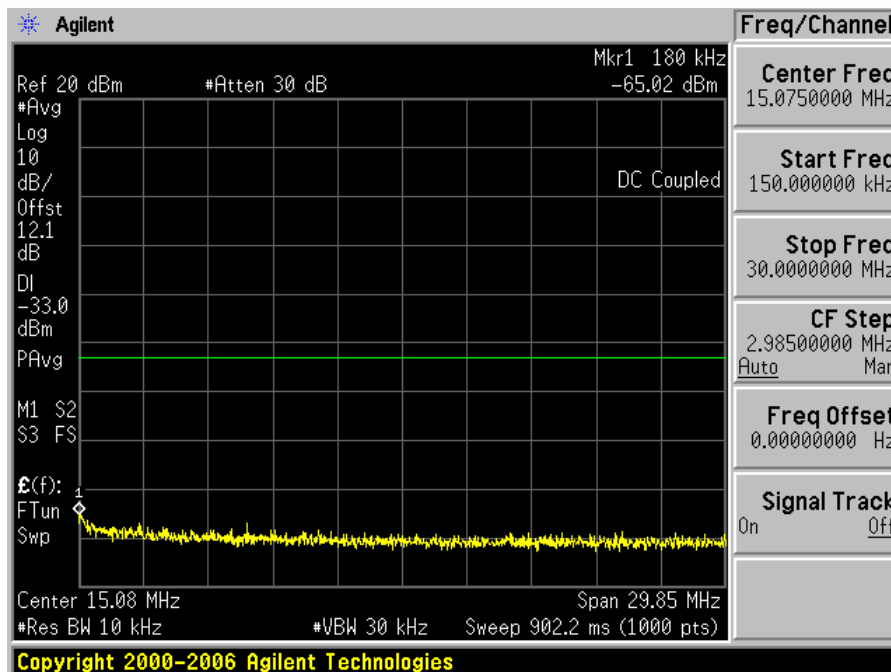


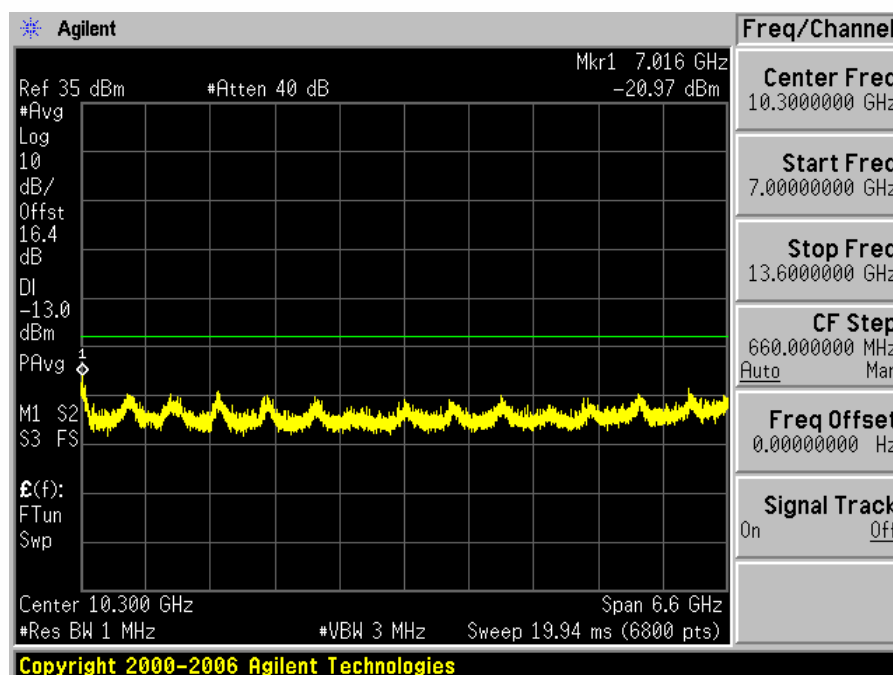
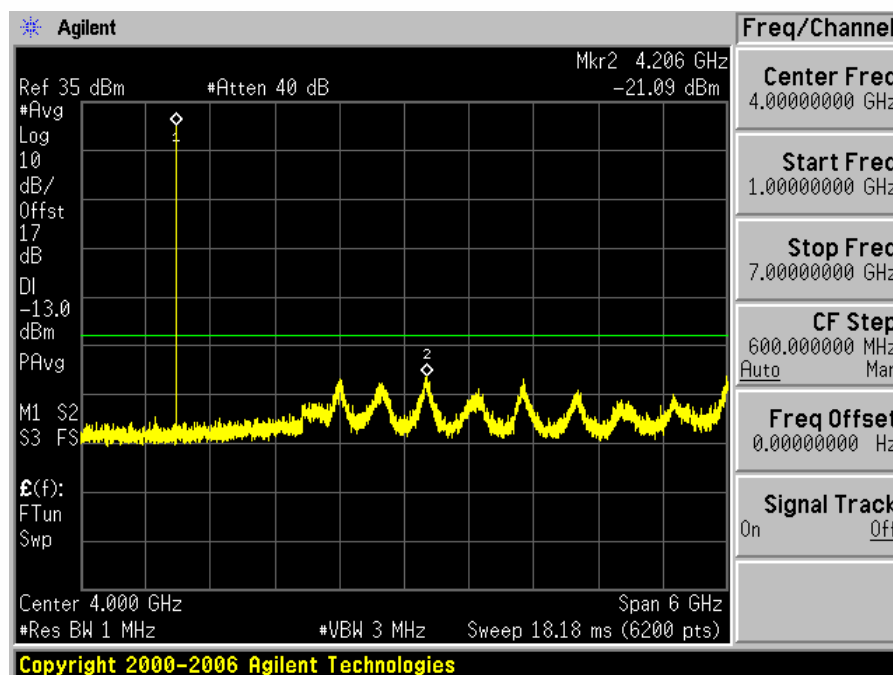


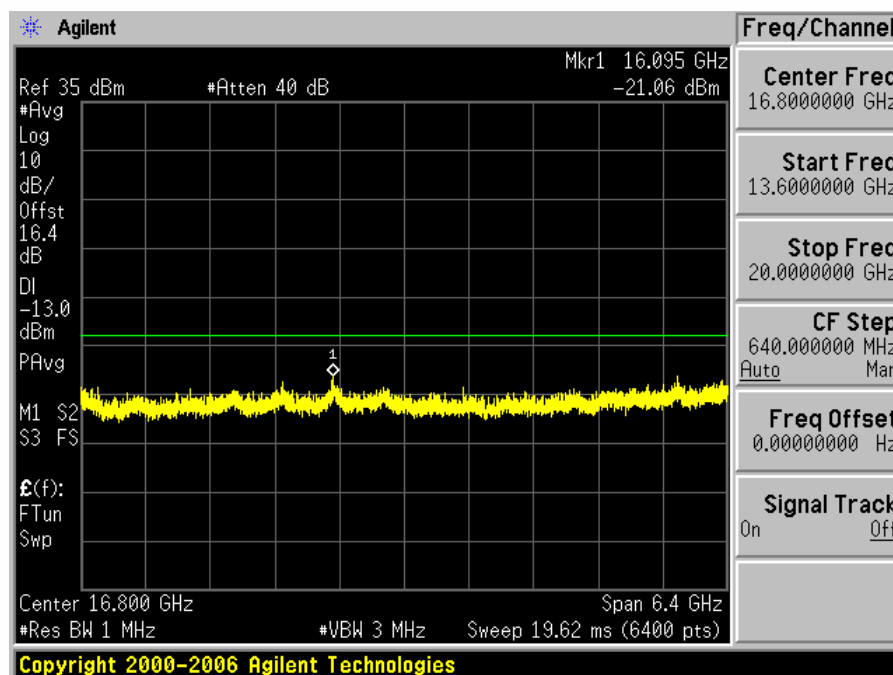


Test Channel=MCH

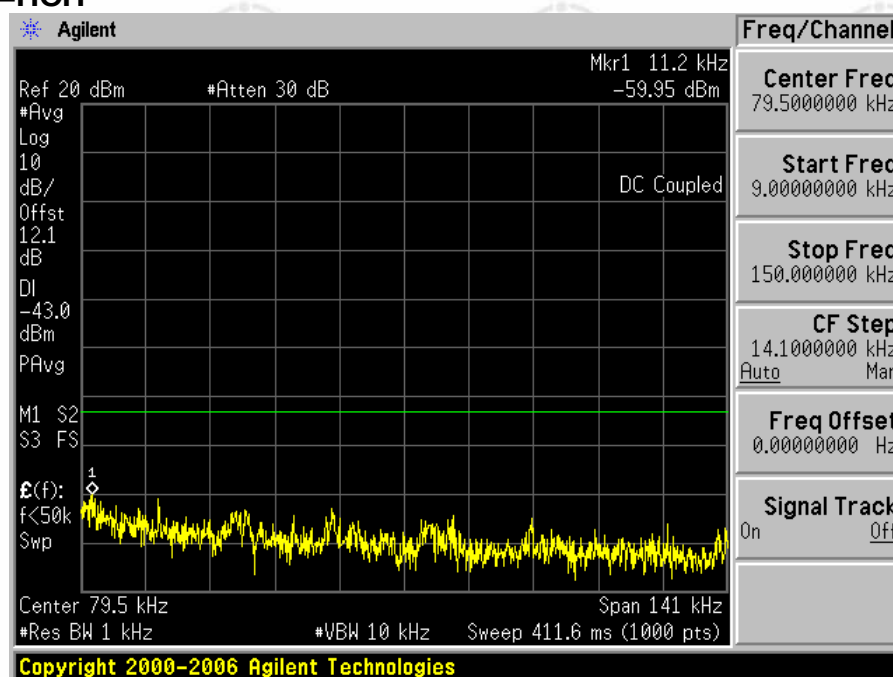


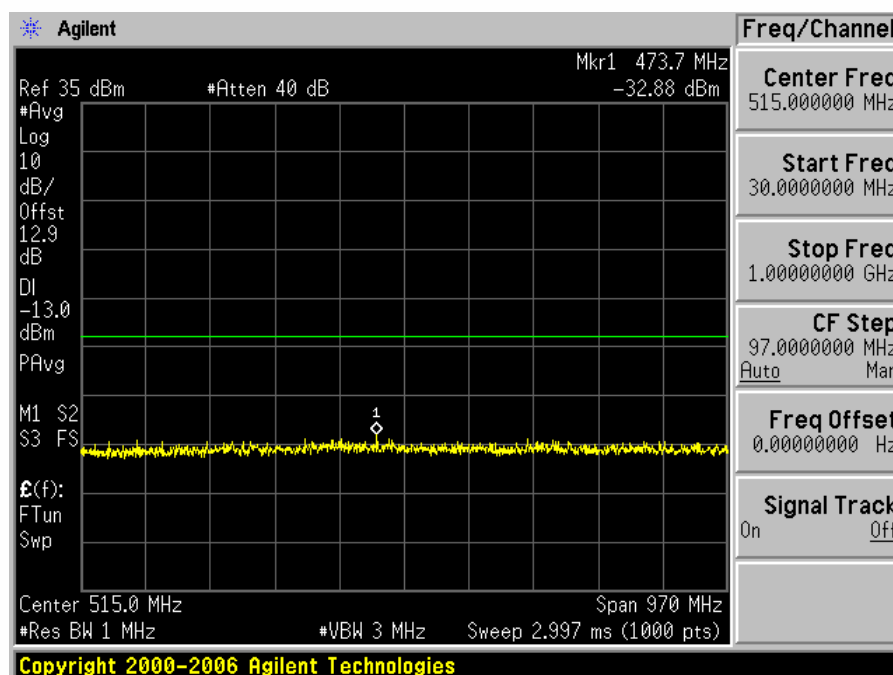
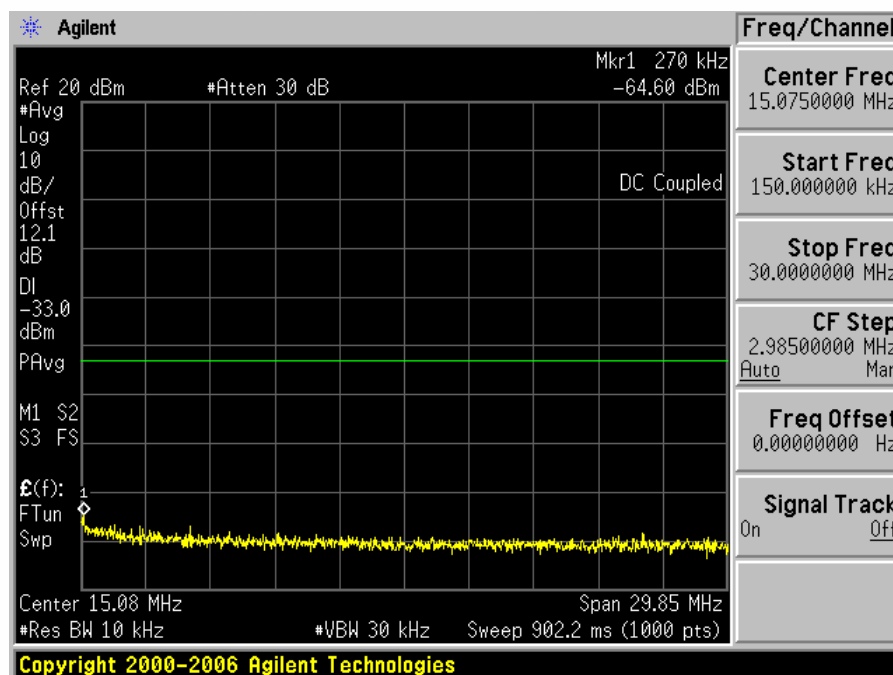


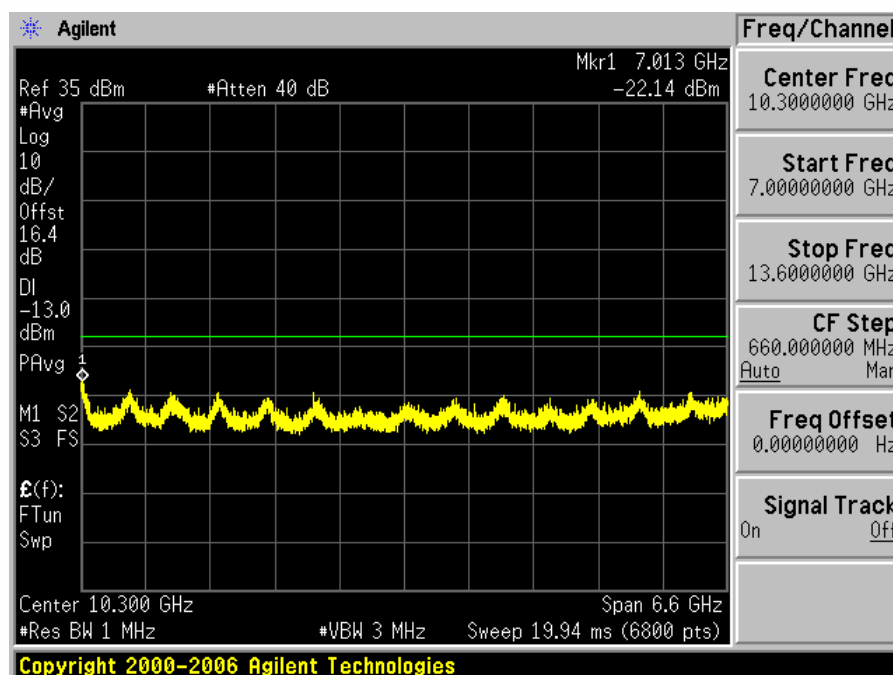
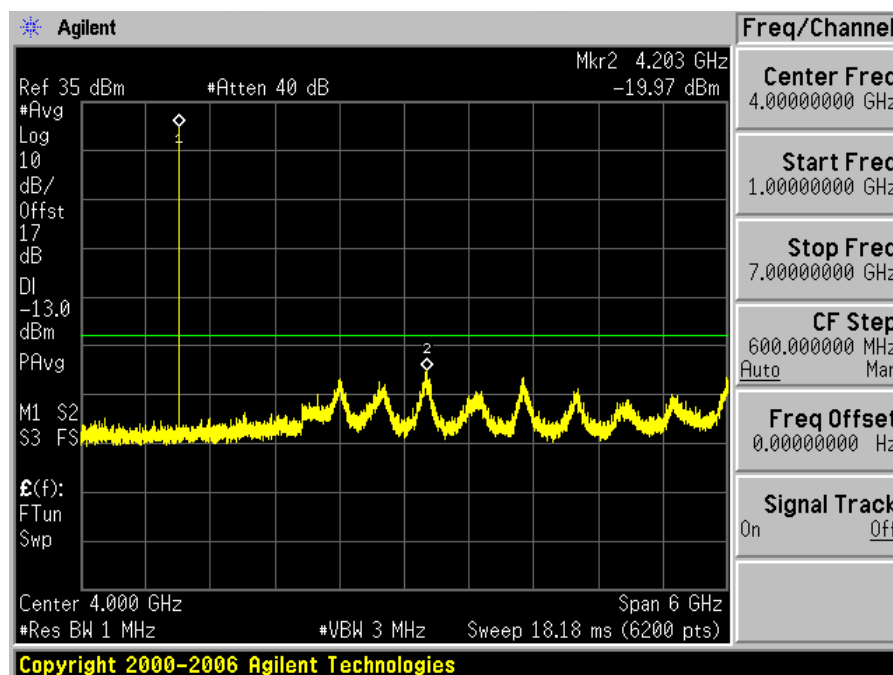


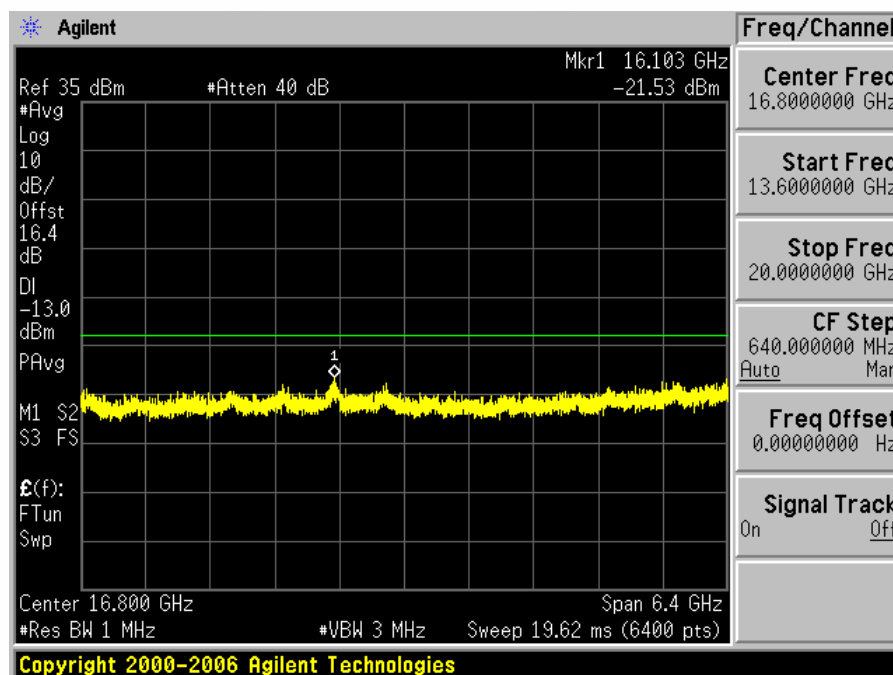


Test Channel=HCH







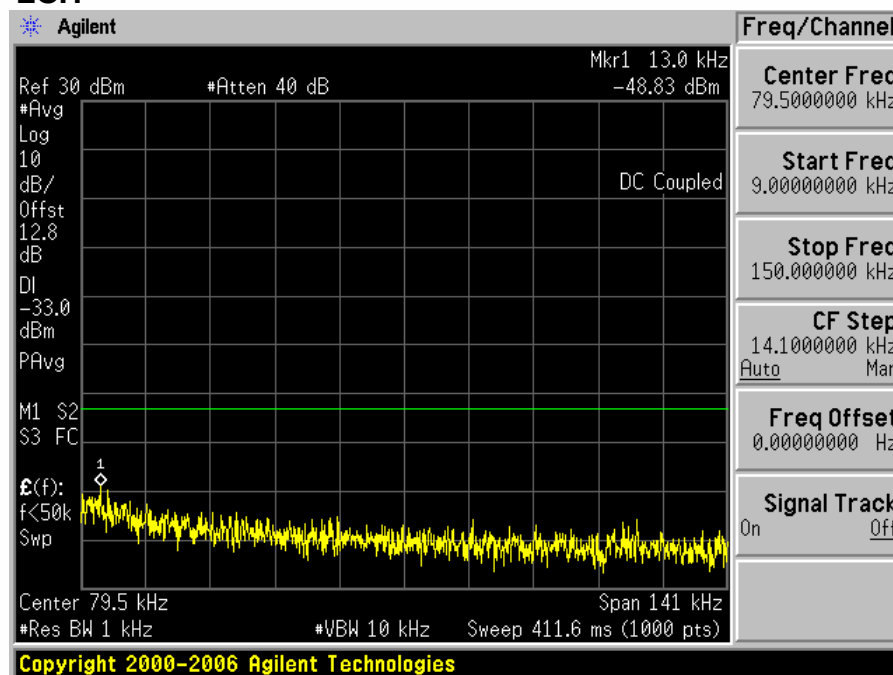


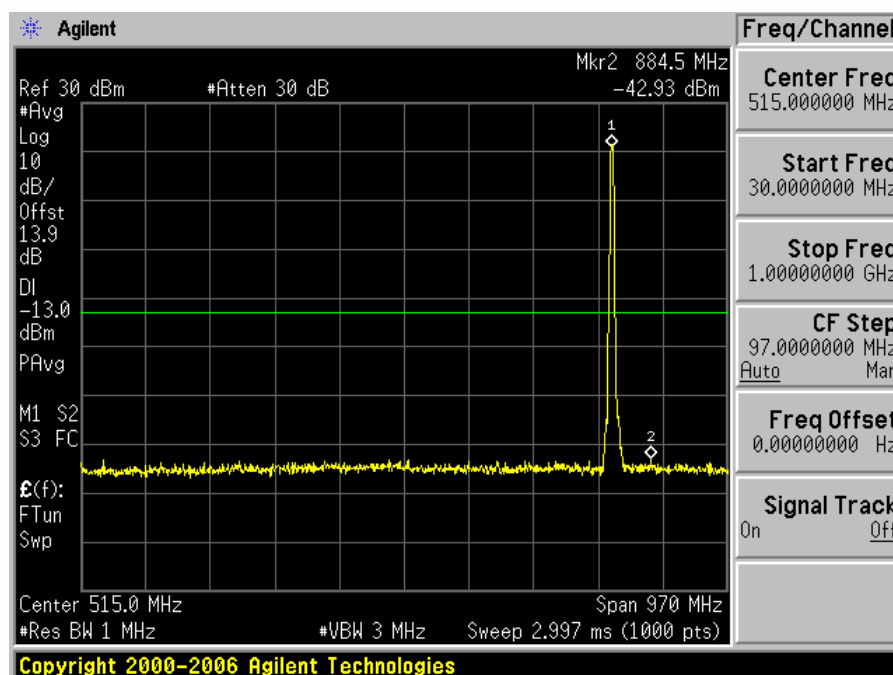
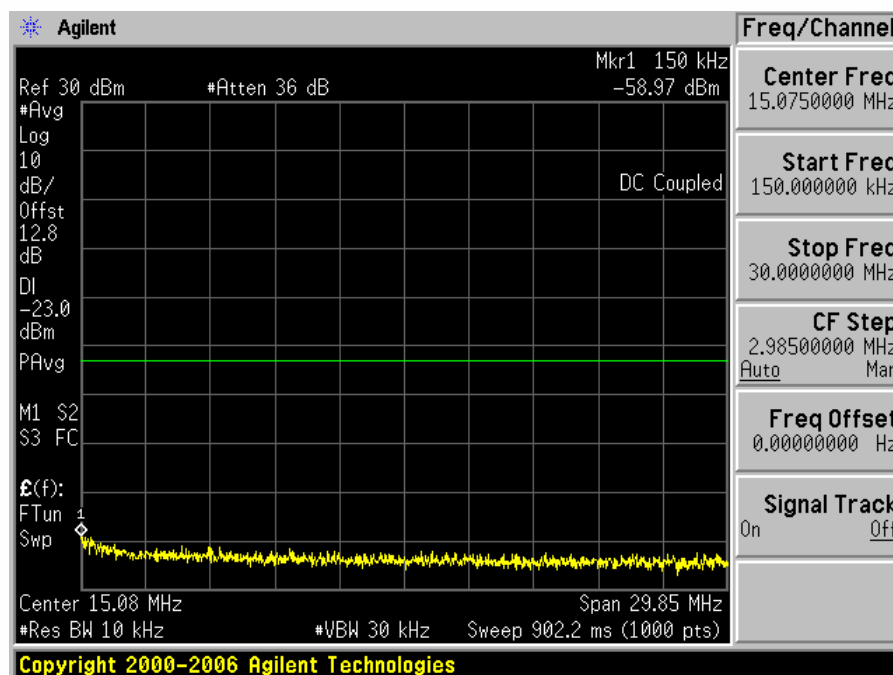
For WCDMA

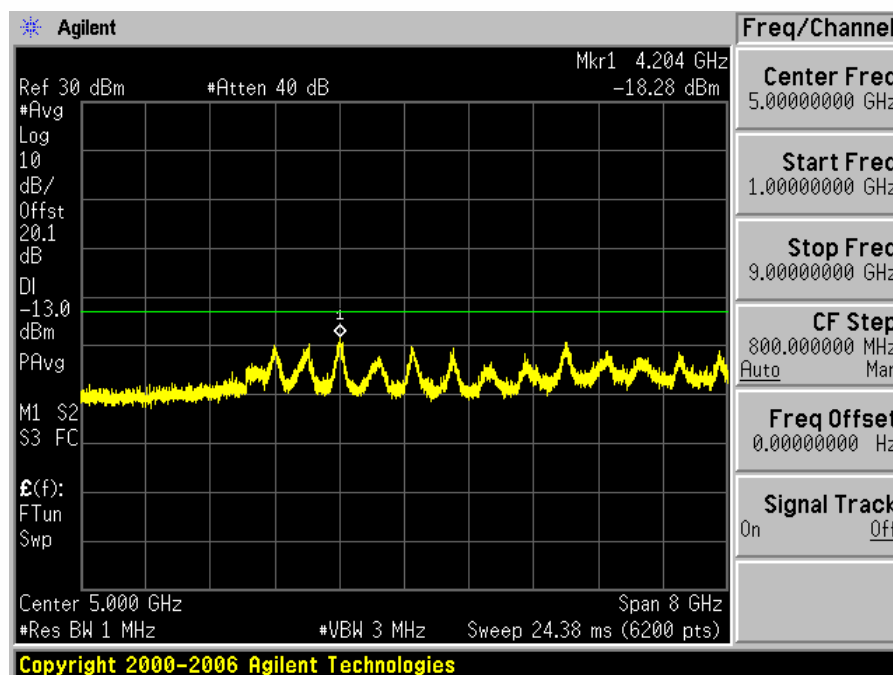
Test Band=WCDMA850

Test Mode=UMTS/TM1

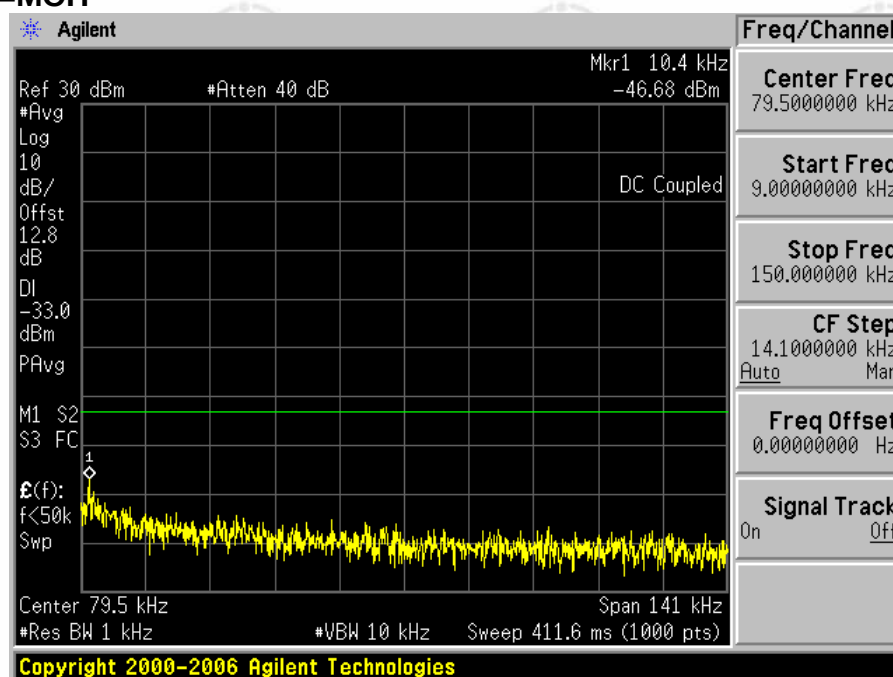
Test Channel=LCH

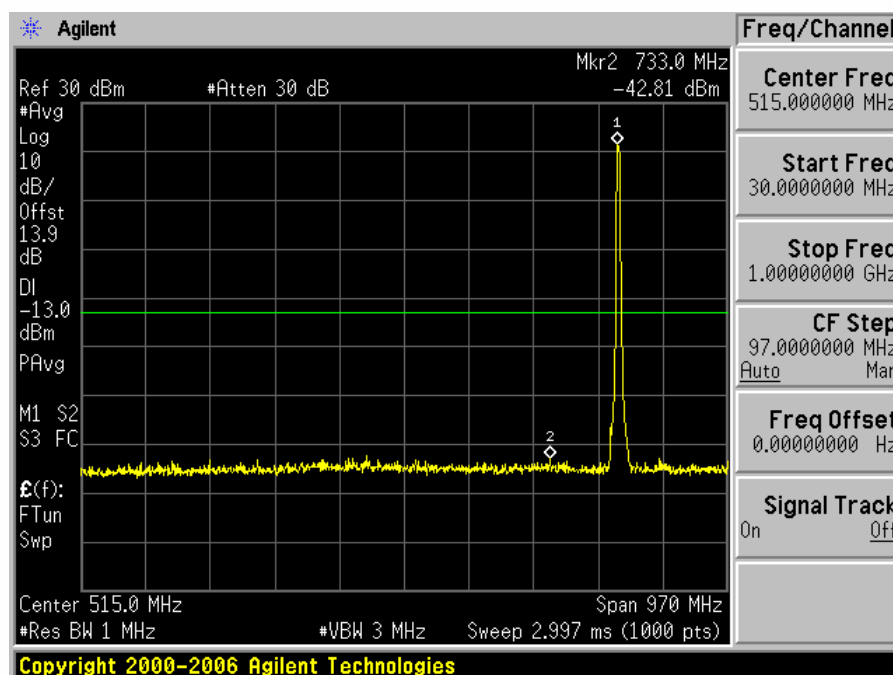
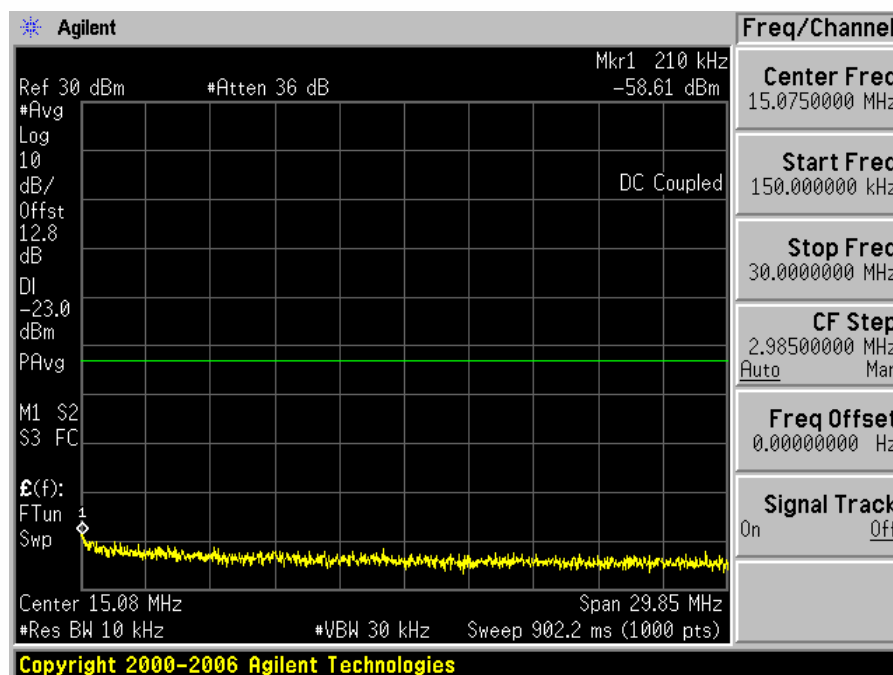


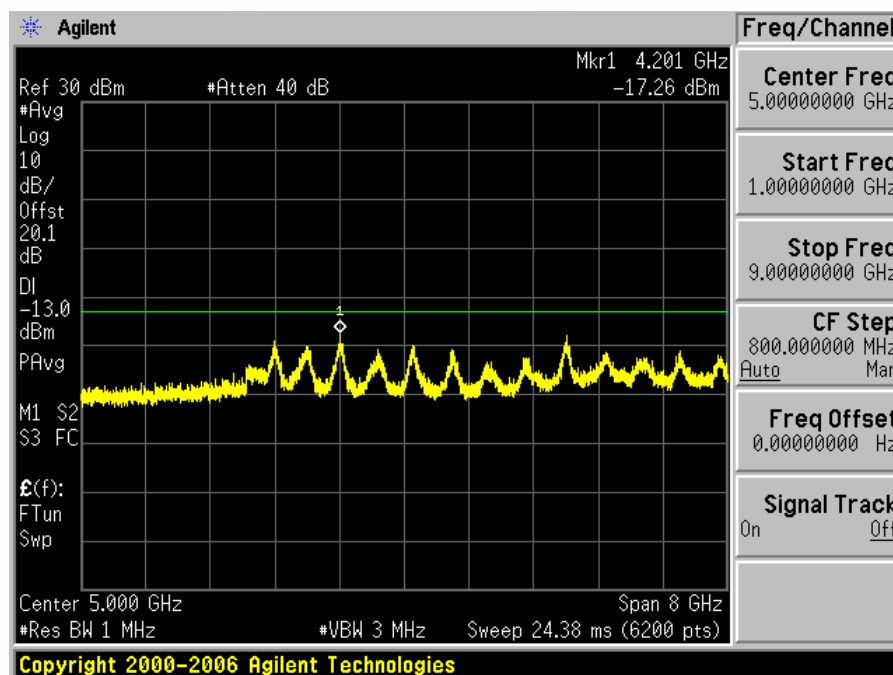




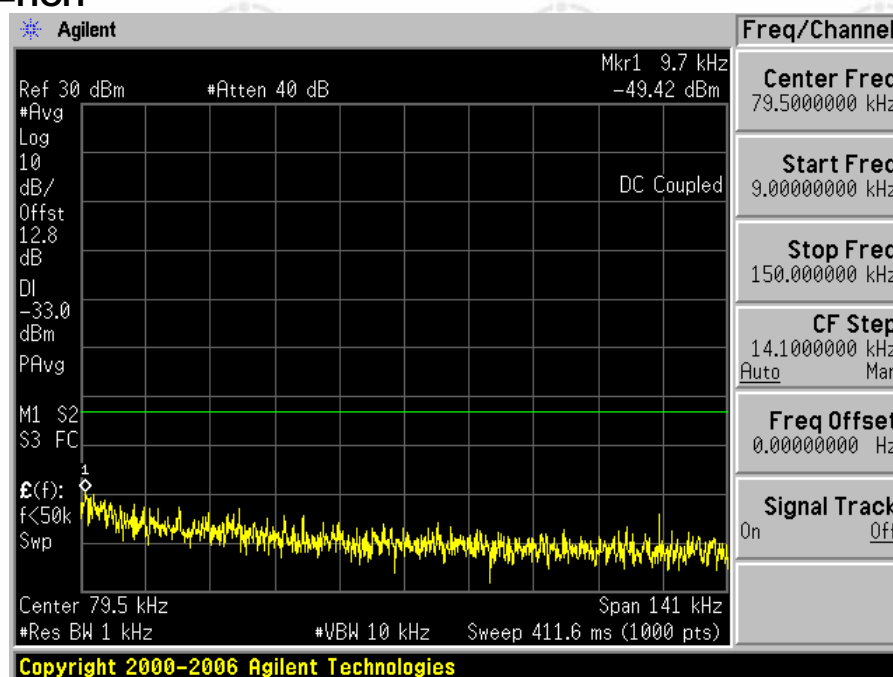
Test Channel=MCH

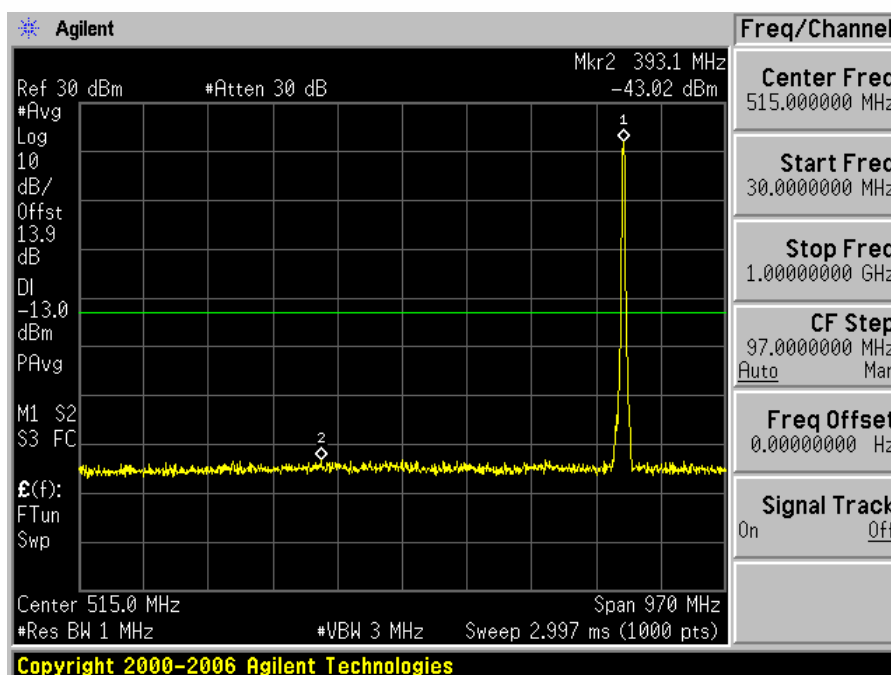
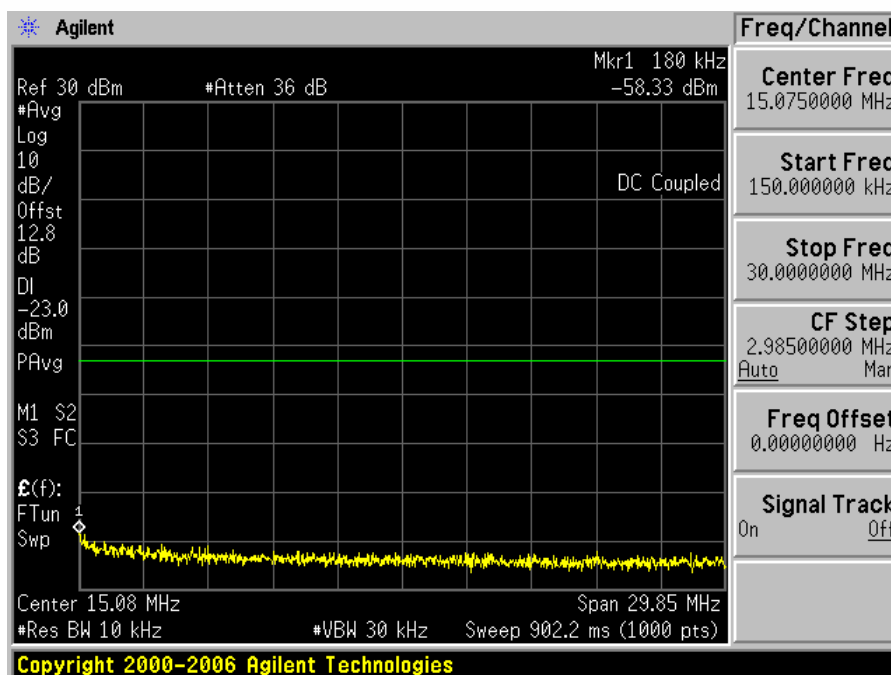


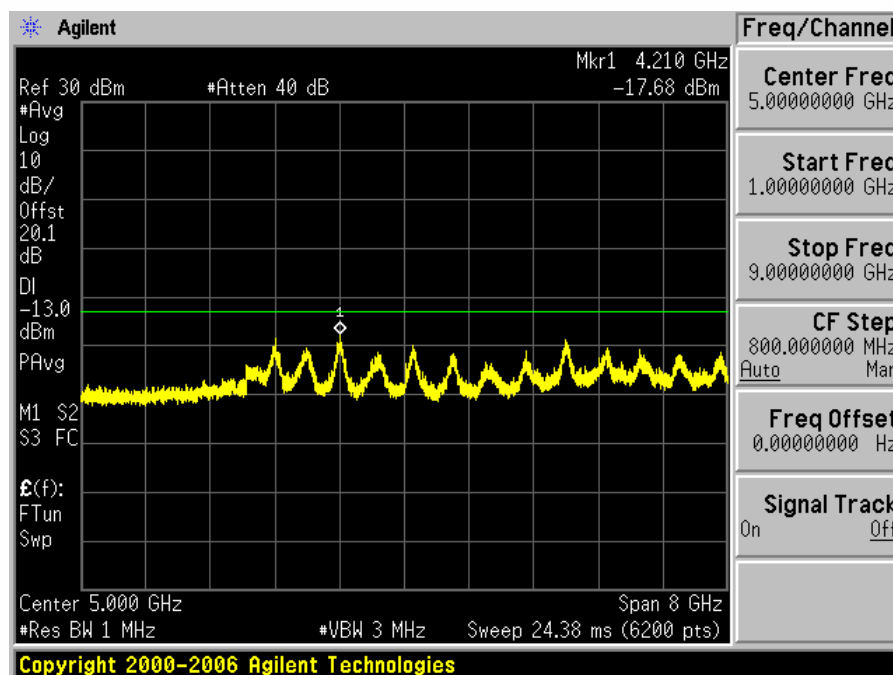




Test Channel=HCH



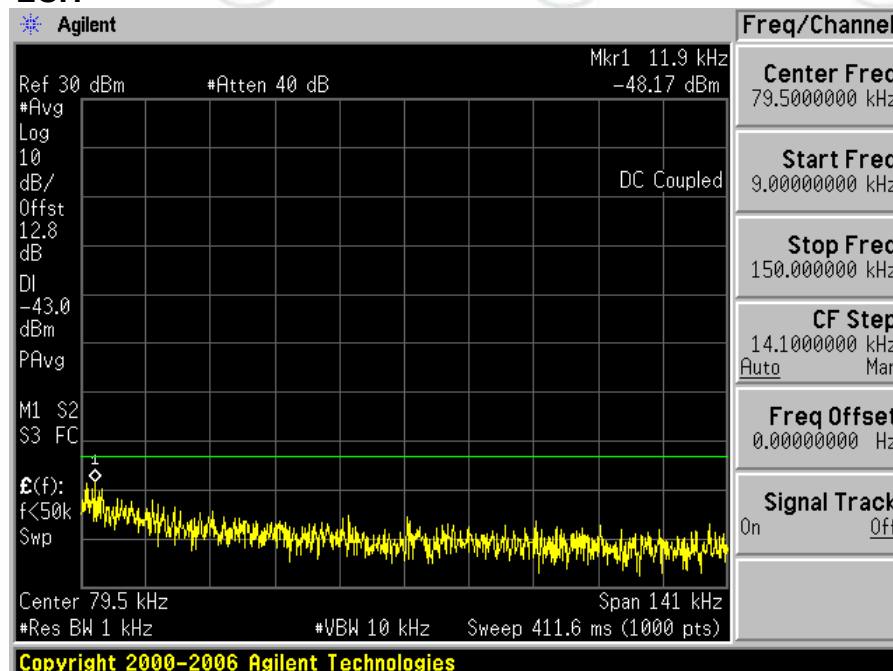


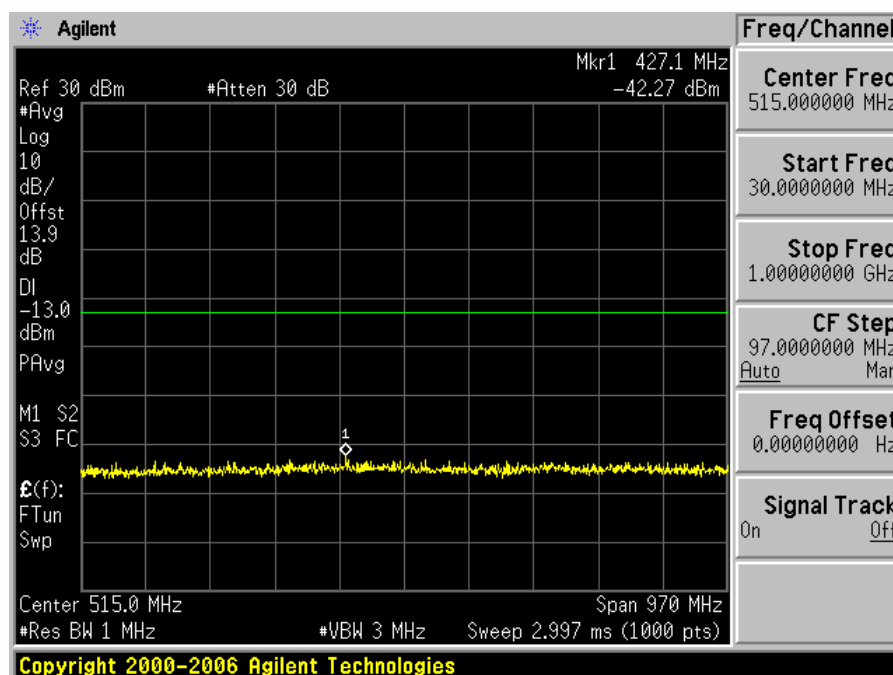
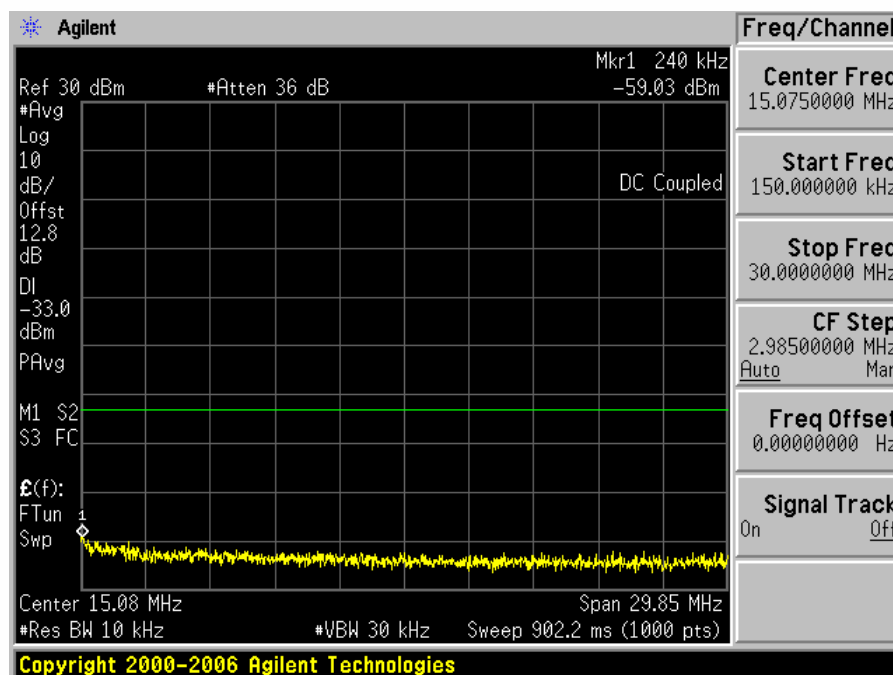


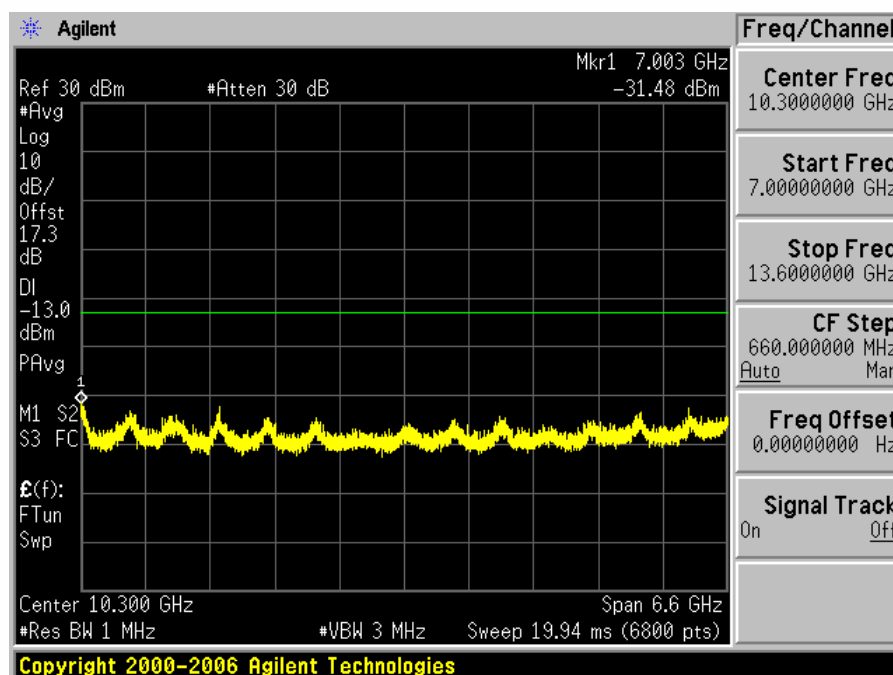
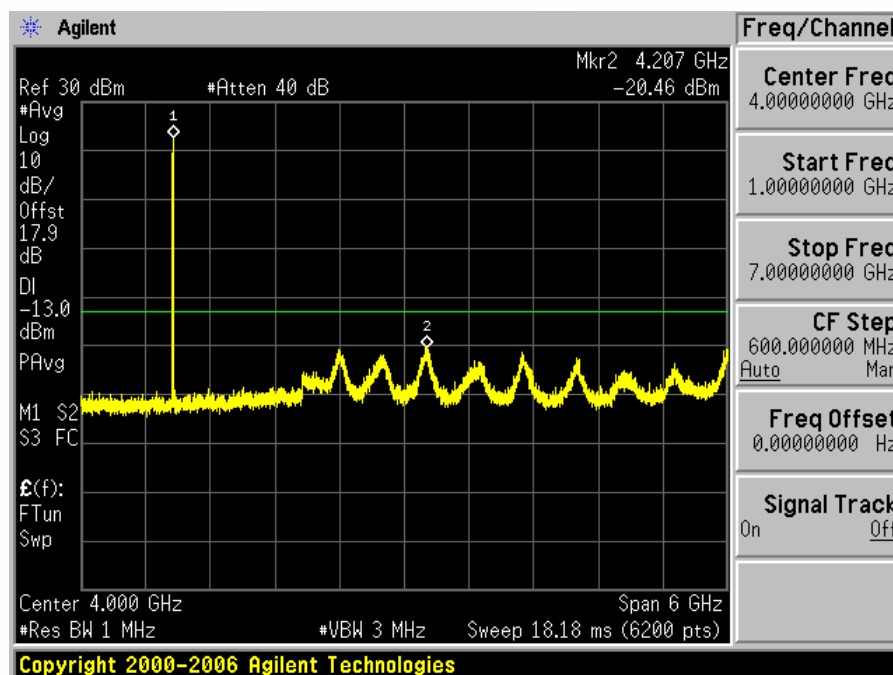
Test Band=WCDMA1900

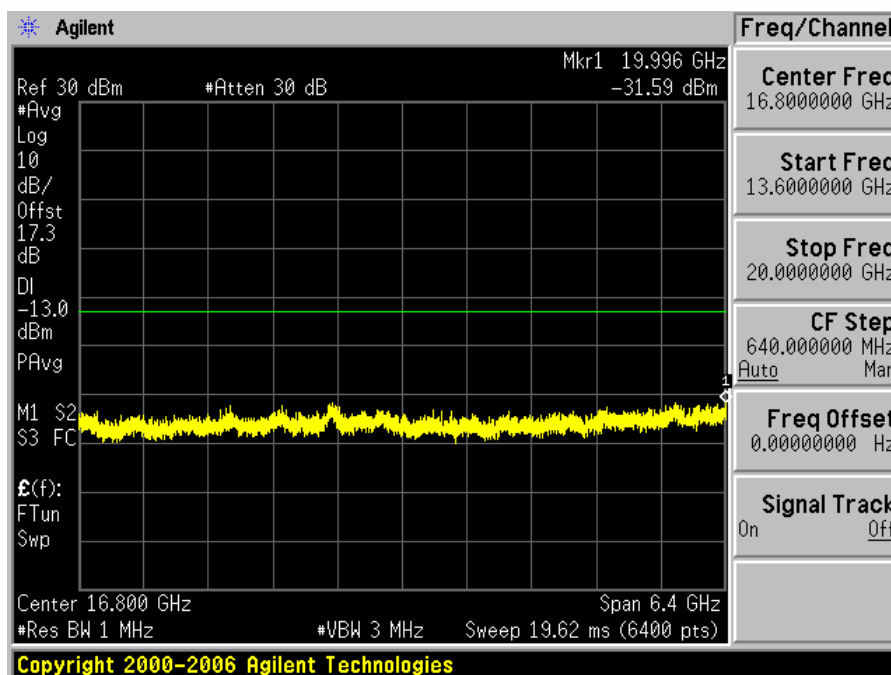
Test Mode=UMTS/TM1

Test Channel=LCH

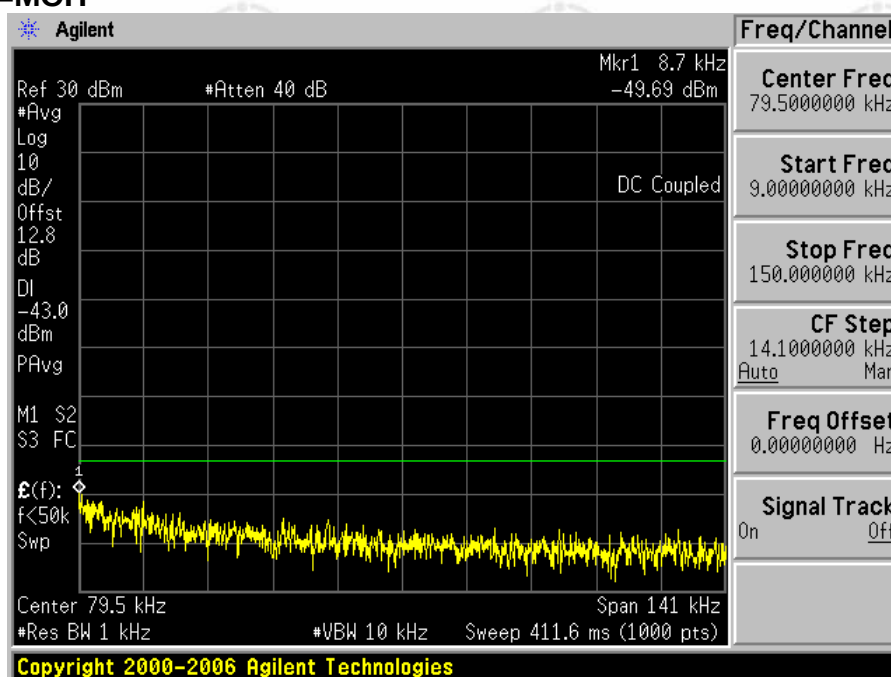


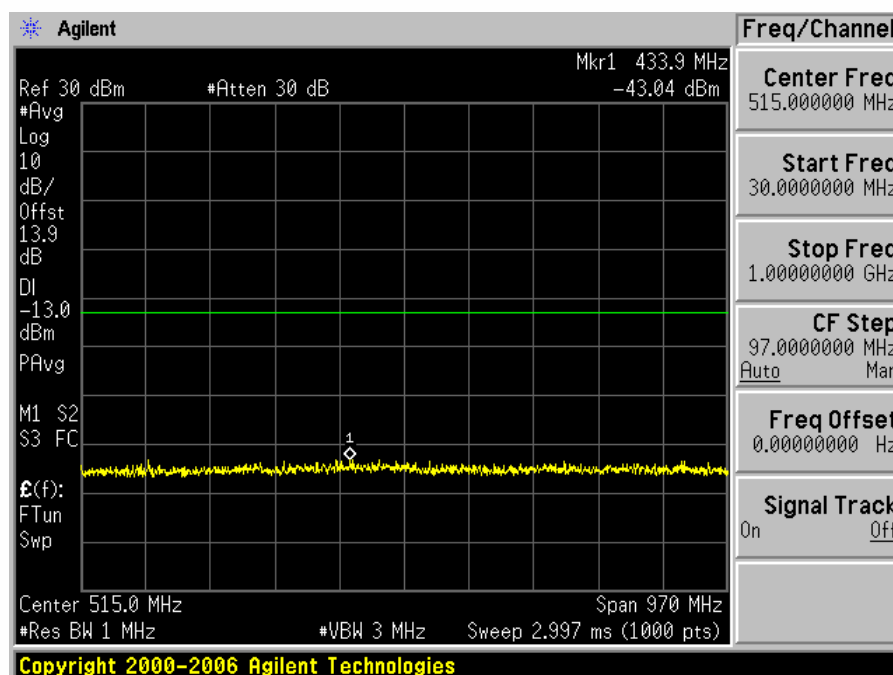
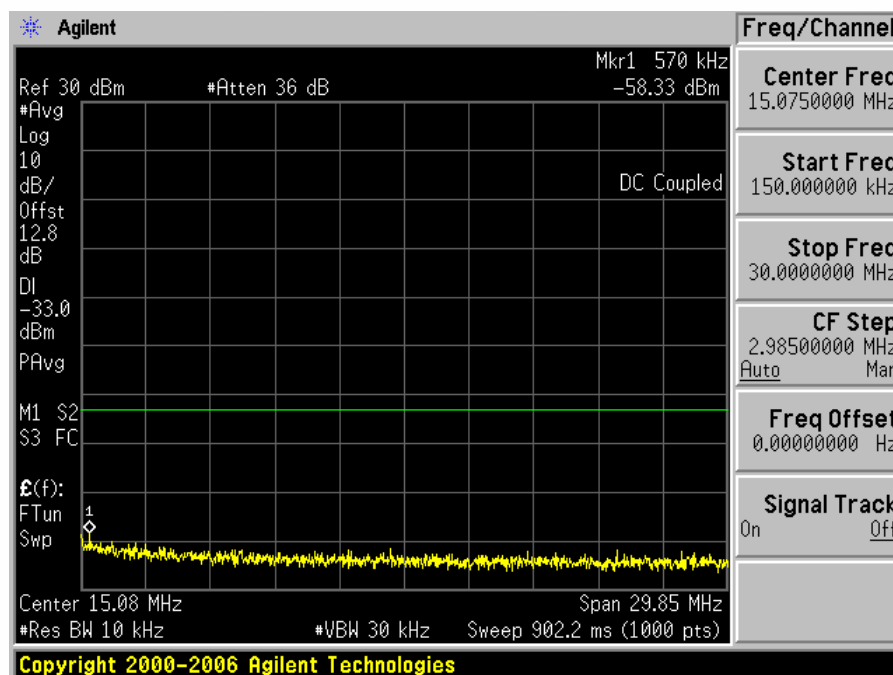


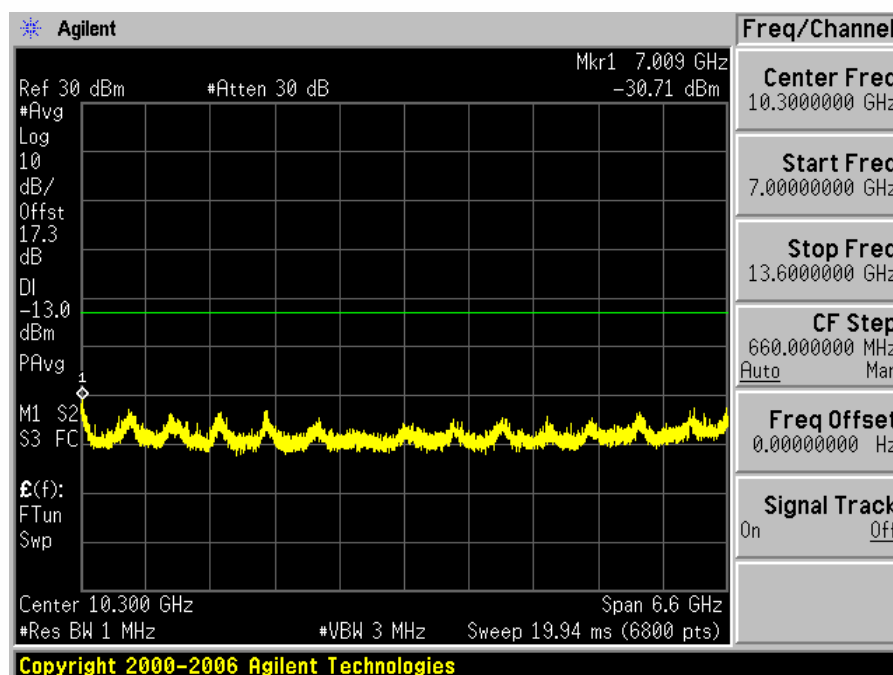
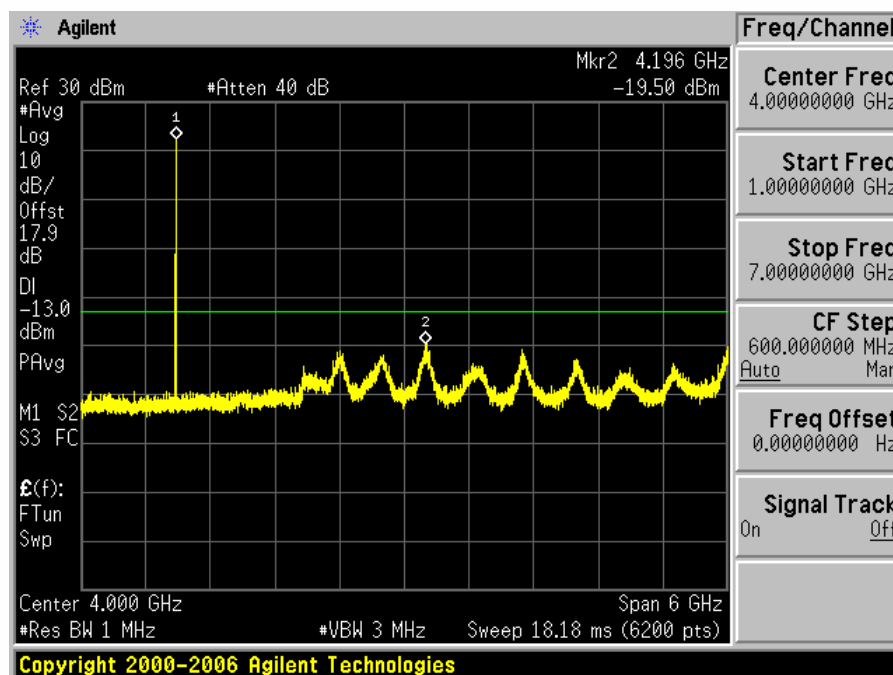


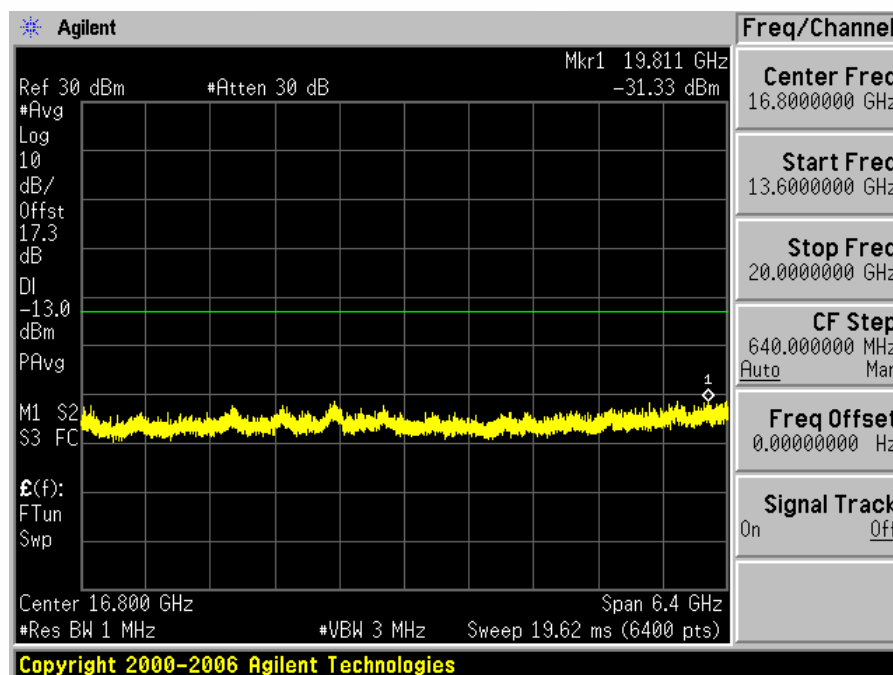


Test Channel=MCH

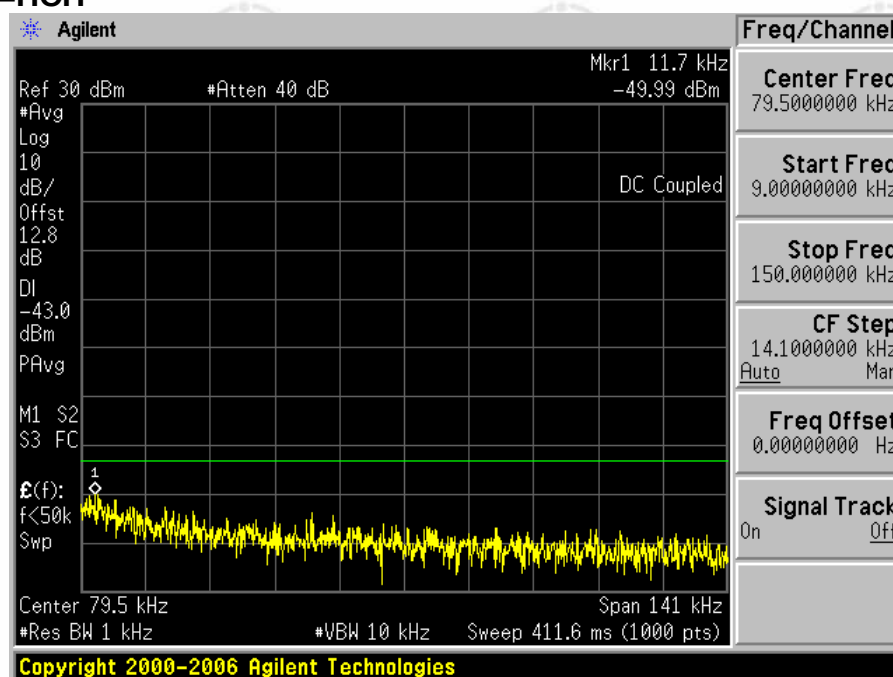


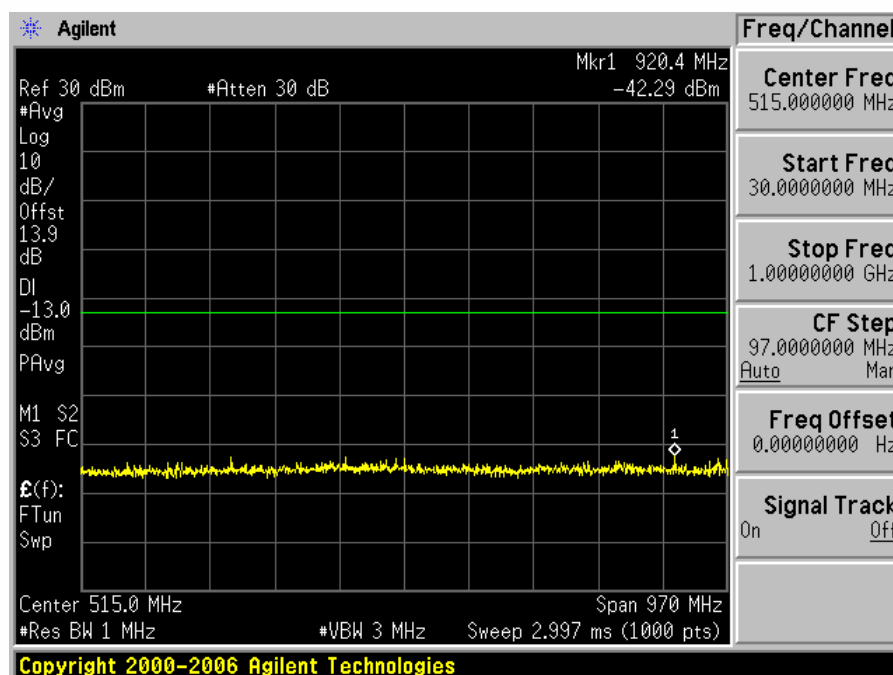
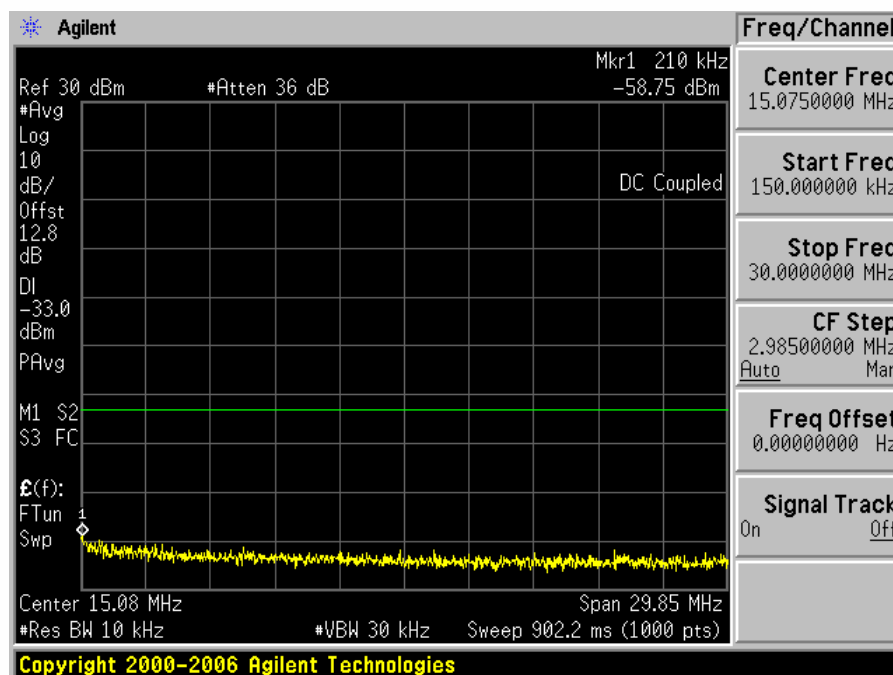


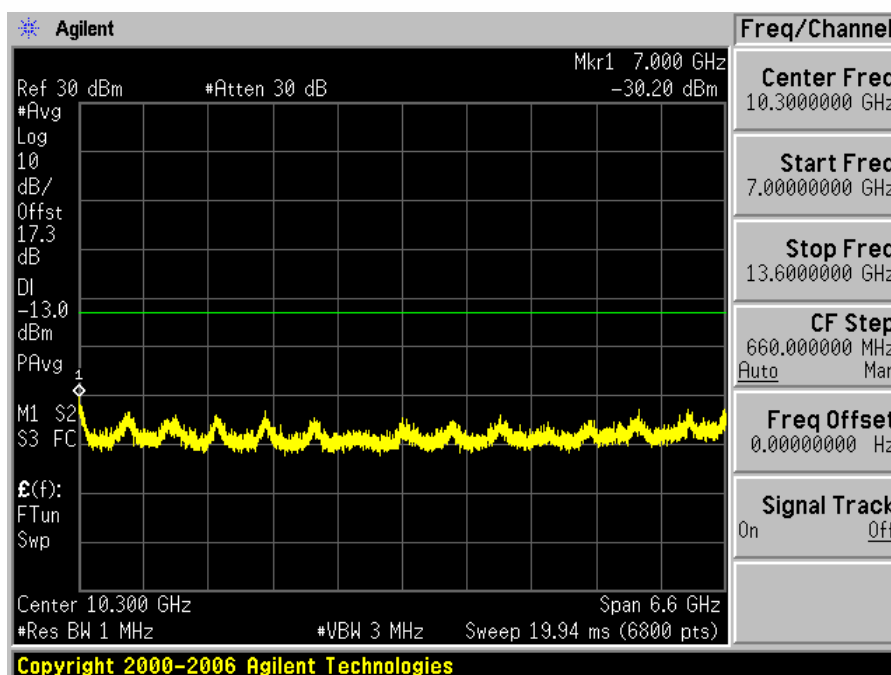
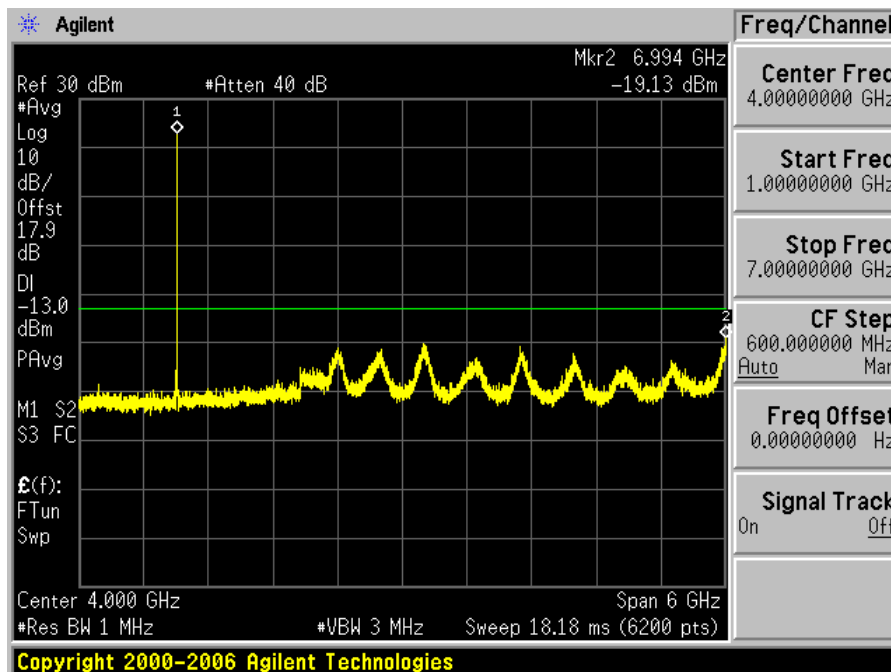


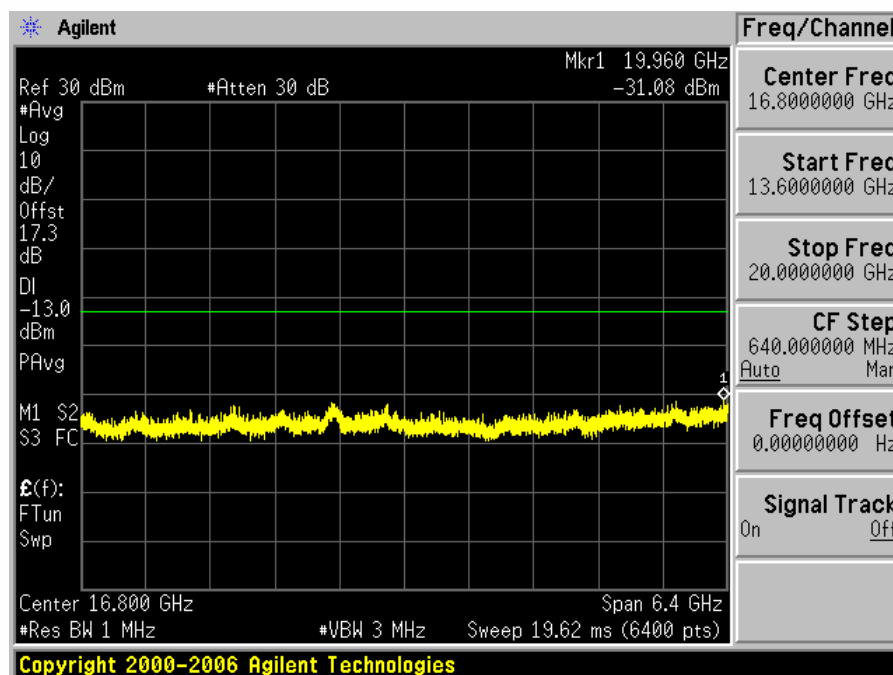


Test Channel=HCH









Appendix F) Frequency Stability

Test Requirement:	Part 2.1055 and RSS-132 Clause 4.3/RSS-133 Clause 6.3	
Test Method:	TIA-603-D-2010 Clause 2.2.2 and RSS-Gen Clause 4.7	
Test Setup:	Refer to section 5 for details	
Measurement Procedure:	The transmitter output was connected to a calibrated coaxial cable and a Base Station Simulator. The Base Station Simulator was set to force the EUT to its maximum power setting. The tests were performed at three frequencies (low channel and high channel). The EUT was placed in the temperature chamber, the DC leads and RF output cable exited the chamber through an opening made for that purpose. After operating the equipment in standby conditions for 15 minutes before proceeding. The temperature was varied from -30°C to +50°C at intervals of not more than 10°C. The frequency stability was read from the base station at 25°C. The input voltage was varied +/-15%, the frequency stability and input voltage was recorded.	
Instruments Used:	Refer to section 7 for details	
Limit:	Operation Band	Frequency stability Limit(ppm)
	GSM/GPRS/EDGE/WCDMA 850	±2.5ppm
	GSM/GPRS/EDGE/WCDMA 1900	---
Test Results:	Pass	

Frequency Error vs. Voltage:

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM1	LCH	TN	VL	-0.26	0.00	±2.5	PASS
			TN	VN	-1.23	0.00	±2.5	PASS
			TN	VH	2.39	0.00	±2.5	PASS
		MCH	TN	VL	3.42	0.00	±2.5	PASS
			TN	VN	3.87	0.00	±2.5	PASS
			TN	VH	4.58	0.01	±2.5	PASS
		HCH	TN	VL	4.20	0.00	±2.5	PASS
			TN	VN	4.07	0.00	±2.5	PASS
			TN	VH	4.84	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM2	LCH	TN	VL	5.42	0.01	±2.5	PASS
			TN	VN	3.62	0.00	±2.5	PASS
			TN	VH	2.97	0.00	±2.5	PASS
		MCH	TN	VL	3.81	0.00	±2.5	PASS
			TN	VN	2.65	0.00	±2.5	PASS
			TN	VH	2.39	0.00	±2.5	PASS
		HCH	TN	VL	2.84	0.00	±2.5	PASS
			TN	VN	6.07	0.01	±2.5	PASS
			TN	VH	3.03	0.00	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM1	LCH	TN	VL	-6.91	0.00	±2.5	PASS
			TN	VN	-7.49	0.00	±2.5	PASS
			TN	VH	-6.91	0.00	±2.5	PASS
		MCH	TN	VL	-10.40	-0.01	±2.5	PASS
			TN	VN	-7.88	0.00	±2.5	PASS
			TN	VH	-13.37	-0.01	±2.5	PASS
		HCH	TN	VL	-4.71	0.00	±2.5	PASS
			TN	VN	-7.10	0.00	±2.5	PASS
			TN	VH	-9.36	0.00	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM2	LCH	TN	VL	-1.03	0.00	±2.5	PASS
			TN	VN	-1.29	0.00	±2.5	PASS
			TN	VH	-5.88	0.00	±2.5	PASS
		MCH	TN	VL	-11.95	-0.01	±2.5	PASS
			TN	VN	-9.10	0.00	±2.5	PASS
			TN	VH	-12.07	-0.01	±2.5	PASS
		HCH	TN	VL	-11.69	-0.01	±2.5	PASS
			TN	VN	-10.53	-0.01	±2.5	PASS
			TN	VH	-6.52	0.00	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA850	TM1	LCH	TN	VL	-7.86	-0.01	±2.5	PASS
			TN	VN	-7.61	-0.01	±2.5	PASS
			TN	VH	-6.48	-0.01	±2.5	PASS
		MCH	TN	VL	2.99	0.00	±2.5	PASS
			TN	VN	-7.61	0.01	±2.5	PASS
			TN	VH	6.62	0.01	±2.5	PASS
		HCH	TN	VL	9.03	0.01	±2.5	PASS
			TN	VN	-7.61	0.01	±2.5	PASS
			TN	VH	6.04	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Temp.	Test Volt.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA1900	TM1	LCH	TN	VL	19.17	0.01	±2.5	PASS
			TN	VN	20.46	0.01	±2.5	PASS
			TN	VH	20.07	0.01	±2.5	PASS
		MCH	TN	VL	24.06	0.01	±2.5	PASS
			TN	VN	20.46	0.01	±2.5	PASS
			TN	VH	25.94	0.01	±2.5	PASS
		HCH	TN	VL	20.34	0.01	±2.5	PASS
			TN	VN	20.46	0.01	±2.5	PASS
			TN	VH	24.55	0.01	±2.5	PASS

Frequency Error vs. Temperature:

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM1	LCH	VN	-30	2.13	0.00	±2.5	PASS
			VN	-20	4.46	0.01	±2.5	PASS
			VN	-10	0.26	0.00	±2.5	PASS
			VN	0	1.61	0.00	±2.5	PASS
			VN	10	3.94	0.00	±2.5	PASS
			VN	20	1.74	0.00	±2.5	PASS
			VN	30	-0.71	0.00	±2.5	PASS
			VN	40	1.81	0.00	±2.5	PASS
			VN	50	-2.20	0.00	±2.5	PASS
GSM850	TM1	MCH	VN	-30	4.65	0.01	±2.5	PASS
			VN	-20	2.45	0.00	±2.5	PASS
			VN	-10	4.13	0.00	±2.5	PASS
			VN	0	4.71	0.01	±2.5	PASS
			VN	10	6.01	0.01	±2.5	PASS
			VN	20	3.16	0.00	±2.5	PASS
			VN	30	3.55	0.00	±2.5	PASS
			VN	40	2.07	0.00	±2.5	PASS
			VN	50	5.88	0.01	±2.5	PASS
GSM850	TM1	HCH	VN	-30	3.55	0.00	±2.5	PASS
			VN	-20	4.13	0.00	±2.5	PASS
			VN	-10	3.36	0.00	±2.5	PASS
			VN	0	4.58	0.01	±2.5	PASS
			VN	10	4.20	0.00	±2.5	PASS
			VN	20	2.84	0.00	±2.5	PASS
			VN	30	4.20	0.00	±2.5	PASS
			VN	40	4.33	0.01	±2.5	PASS
			VN	50	3.10	0.00	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM850	TM2	LCH	VN	-30	3.62	0.00	±2.5	PASS
			VN	-20	3.94	0.00	±2.5	PASS
			VN	-10	3.03	0.00	±2.5	PASS
			VN	0	3.87	0.00	±2.5	PASS
			VN	10	1.49	0.00	±2.5	PASS
			VN	20	5.29	0.01	±2.5	PASS
			VN	30	-0.13	0.00	±2.5	PASS
			VN	40	0.65	0.00	±2.5	PASS
			VN	50	1.68	0.00	±2.5	PASS
GSM850	TM2	MCH	VN	-30	4.58	0.01	±2.5	PASS
			VN	-20	3.55	0.00	±2.5	PASS
			VN	-10	-4.13	0.00	±2.5	PASS
			VN	0	0.39	0.00	±2.5	PASS
			VN	10	4.39	0.01	±2.5	PASS
			VN	20	1.23	0.00	±2.5	PASS
			VN	30	4.20	0.01	±2.5	PASS
			VN	40	0.06	0.00	±2.5	PASS
			VN	50	2.97	0.00	±2.5	PASS
GSM850	TM2	HCH	VN	-30	4.52	0.01	±2.5	PASS
			VN	-20	2.45	0.00	±2.5	PASS
			VN	-10	2.26	0.00	±2.5	PASS
			VN	0	-2.71	0.00	±2.5	PASS
			VN	10	0.13	0.00	±2.5	PASS
			VN	20	2.52	0.00	±2.5	PASS
			VN	30	-2.00	0.00	±2.5	PASS
			VN	40	0.52	0.00	±2.5	PASS
			VN	50	3.29	0.00	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM1	LCH	VN	-30	-6.33	0.00	±2.5	PASS
			VN	-20	-9.81	-0.01	±2.5	PASS
			VN	-10	-5.23	0.00	±2.5	PASS
			VN	0	-5.62	0.00	±2.5	PASS
			VN	10	-8.07	0.00	±2.5	PASS
			VN	20	-5.42	0.00	±2.5	PASS
			VN	30	-6.13	0.00	±2.5	PASS
			VN	40	-7.81	0.00	±2.5	PASS
			VN	50	-6.39	0.00	±2.5	PASS
GSM1900	TM1	MCH	VN	-30	-7.30	0.00	±2.5	PASS
			VN	-20	-8.46	0.00	±2.5	PASS
			VN	-10	-11.30	-0.01	±2.5	PASS
			VN	0	-9.88	-0.01	±2.5	PASS
			VN	10	-8.14	0.00	±2.5	PASS
			VN	20	-9.56	-0.01	±2.5	PASS
			VN	30	-6.01	0.00	±2.5	PASS
			VN	40	-10.78	-0.01	±2.5	PASS
			VN	50	-8.07	0.00	±2.5	PASS
GSM1900	TM1	HCH	VN	-30	-3.03	0.00	±2.5	PASS
			VN	-20	-3.87	0.00	±2.5	PASS
			VN	-10	-6.07	0.00	±2.5	PASS
			VN	0	-4.52	0.00	±2.5	PASS
			VN	10	-5.62	0.00	±2.5	PASS
			VN	20	-5.23	0.00	±2.5	PASS
			VN	30	-5.68	0.00	±2.5	PASS
			VN	40	-3.29	0.00	±2.5	PASS
			VN	50	-6.01	0.00	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
GSM1900	TM2	LCH	VN	-30	-8.65	0.00	±2.5	PASS
			VN	-20	-3.36	0.00	±2.5	PASS
			VN	-10	9.69	0.01	±2.5	PASS
			VN	0	-0.77	0.00	±2.5	PASS
			VN	10	-3.87	0.00	±2.5	PASS
			VN	20	4.84	0.00	±2.5	PASS
			VN	30	-4.65	0.00	±2.5	PASS
			VN	40	-1.03	0.00	±2.5	PASS
			VN	50	1.16	0.00	±2.5	PASS
GSM1900	TM2	MCH	VN	-30	-12.33	-0.01	±2.5	PASS
			VN	-20	-12.79	-0.01	±2.5	PASS
			VN	-10	-8.59	0.00	±2.5	PASS
			VN	0	-19.89	-0.01	±2.5	PASS
			VN	10	-5.10	0.00	±2.5	PASS
			VN	20	-11.62	-0.01	±2.5	PASS
			VN	30	-8.14	0.00	±2.5	PASS
			VN	40	-20.40	-0.01	±2.5	PASS
			VN	50	-16.47	-0.01	±2.5	PASS
GSM1900	TM2	HCH	VN	-30	-10.78	-0.01	±2.5	PASS
			VN	-20	-11.82	-0.01	±2.5	PASS
			VN	-10	-20.86	-0.01	±2.5	PASS
			VN	0	-7.68	0.00	±2.5	PASS
			VN	10	-11.17	-0.01	±2.5	PASS
			VN	20	-14.66	-0.01	±2.5	PASS
			VN	30	-16.92	-0.01	±2.5	PASS
			VN	40	-16.98	-0.01	±2.5	PASS
			VN	50	-19.69	-0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 850	TM1	LCH	VN	-30	-5.42	-0.01	±2.5	PASS
			VN	-20	-2.81	0.00	±2.5	PASS
			VN	-10	1.51	0.00	±2.5	PASS
			VN	0	-0.49	0.00	±2.5	PASS
			VN	10	3.57	0.00	±2.5	PASS
			VN	20	2.20	0.00	±2.5	PASS
			VN	30	5.72	0.01	±2.5	PASS
			VN	40	-0.52	0.00	±2.5	PASS
			VN	50	1.94	0.00	±2.5	PASS
WCDMA 850	TM1	MCH	VN	-30	-0.31	0.00	±2.5	PASS
			VN	-20	2.79	0.00	±2.5	PASS
			VN	-10	7.71	0.01	±2.5	PASS
			VN	0	5.08	0.01	±2.5	PASS
			VN	10	5.42	0.01	±2.5	PASS
			VN	20	4.94	0.01	±2.5	PASS
			VN	30	8.97	0.01	±2.5	PASS
			VN	40	3.94	0.00	±2.5	PASS
			VN	50	7.57	0.01	±2.5	PASS
WCDMA 850	TM1	HCH	VN	-30	7.64	0.01	±2.5	PASS
			VN	-20	8.24	0.01	±2.5	PASS
			VN	-10	9.52	0.01	±2.5	PASS
			VN	0	6.47	0.01	±2.5	PASS
			VN	10	9.57	0.01	±2.5	PASS
			VN	20	9.58	0.01	±2.5	PASS
			VN	30	9.86	0.01	±2.5	PASS
			VN	40	10.45	0.01	±2.5	PASS
			VN	50	8.97	0.01	±2.5	PASS

Test Band	Test Mode	Test Channel	Test Volt.	Test Temp.	Freq.Error (Hz)	Freq.vs.rated (ppm)	Limit (ppm)	Verdict
WCDMA 1900	TM1	LCH	VN	-30	18.68	0.01	±2.5	PASS
			VN	-20	22.31	0.01	±2.5	PASS
			VN	-10	19.04	0.01	±2.5	PASS
			VN	0	15.64	0.01	±2.5	PASS
			VN	10	22.66	0.01	±2.5	PASS
			VN	20	19.23	0.01	±2.5	PASS
			VN	30	26.52	0.01	±2.5	PASS
			VN	40	24.86	0.01	±2.5	PASS
			VN	50	21.39	0.01	±2.5	PASS
WCDMA 1900	TM1	MCH	VN	-30	21.13	0.01	±2.5	PASS
			VN	-20	25.45	0.01	±2.5	PASS
			VN	-10	18.26	0.01	±2.5	PASS
			VN	0	17.76	0.01	±2.5	PASS
			VN	10	22.75	0.01	±2.5	PASS
			VN	20	20.00	0.01	±2.5	PASS
			VN	30	17.90	0.01	±2.5	PASS
			VN	40	28.21	0.02	±2.5	PASS
			VN	50	18.89	0.01	±2.5	PASS
WCDMA 1900	TM1	HCH	VN	-30	24.05	0.01	±2.5	PASS
			VN	-20	27.60	0.01	±2.5	PASS
			VN	-10	27.98	0.01	±2.5	PASS
			VN	0	23.07	0.01	±2.5	PASS
			VN	10	21.42	0.01	±2.5	PASS
			VN	20	24.15	0.01	±2.5	PASS
			VN	30	20.32	0.01	±2.5	PASS
			VN	40	24.40	0.01	±2.5	PASS
			VN	50	29.30	0.02	±2.5	PASS

Appendix G) Effective Radiated Power of Transmitter (ERP/EIRP)

Receiver Setup:	Frequency	Detector	RBW	VBW	Remark									
	30MHz-1GHz	peak	100kHz	300kHz	Peak									
	Above 1GHz	Peak	1MHz	3MHz	Peak									
Measurement Procedure:	Test procedure as below: 1) The EUT was powered ON and placed on a 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test. 2) The EUT was set 3 meters(above 18GHz the distance is 1 meter) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3) The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made. 4) Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization. 5) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter. 6) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions. 7) The output power into the substitution antenna was then measured. 8) Steps 6) and 7)were repeated with both antennas polarized. 9) Calculate power in dBm by the following formula: ERP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBd) EIRP(dBm) = Pg(dBm) – cable loss (dB) + antenna gain (dBi) EIRP=ERP+2.15dB where: Pg is the generator output power into the substitution antenna. 10) Test the EUT in the lowest channel, the middle channel the Highest channel 11) The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode,And found the X axis positioning which it is worse case. 12) Repeat above procedures until all frequencies measured was complete.													
Limit:	<table><tr><td>Mode</td><td>GSM 850/WCDMA/HSDPA /HSUPA Band V</td><td>GSM 1900/WCDMA/HSDPA /HSUPA Band V</td></tr><tr><td>Frequency</td><td>824 – 849MHz</td><td>1850 – 1910MHz</td></tr><tr><td>Limit</td><td>38.45dBm (7W)</td><td>33.01dBm (2W)</td></tr></table>					Mode	GSM 850/WCDMA/HSDPA /HSUPA Band V	GSM 1900/WCDMA/HSDPA /HSUPA Band V	Frequency	824 – 849MHz	1850 – 1910MHz	Limit	38.45dBm (7W)	33.01dBm (2W)
Mode	GSM 850/WCDMA/HSDPA /HSUPA Band V	GSM 1900/WCDMA/HSDPA /HSUPA Band V												
Frequency	824 – 849MHz	1850 – 1910MHz												
Limit	38.45dBm (7W)	33.01dBm (2W)												

Measurement Data

GSM 850 (Voice)							
Channel/fc (MHz)	Height (m)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
128/824.2	150	46	23.78	38.45	-14.67	Pass	H
	150	132	29.03	38.45	-9.42	Pass	V
190/836.6	150	61	23.78	38.45	-14.67	Pass	H
	150	102	28.17	38.45	-10.28	Pass	V
251/848.8	150	84	23.32	38.45	-15.13	Pass	H
	150	215	29.05	38.45	-9.40	Pass	V

GPRS 850							
Channel/fc (MHz)	Height (m)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
128/824.2	150	310	23.44	38.45	-15.01	Pass	H
	150	62	28.31	38.45	-10.14	Pass	V
190/836.6	150	39	23.05	38.45	-15.40	Pass	H
	150	58	27.96	38.45	-10.49	Pass	V
251/848.8	150	92	23.15	38.45	-15.30	Pass	H
	150	251	29.01	38.45	-9.44	Pass	V

WCDMA band V							
Channel/fc (MHz)	Height (m)	Azimuth (deg)	ERP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
4132/826.4	150	216	16.58	38.45	-21.87	Pass	H
	150	261	21.07	38.45	-17.38	Pass	V
4183/836.6	150	87	15.73	38.45	-22.72	Pass	H
	150	92	20.67	38.45	-17.78	Pass	V
4233/846.6	150	106	15.07	38.45	-23.38	Pass	H
	150	91	20.39	38.45	-18.06	Pass	V

GSM 1900 (Voice)							
Channel/fc (MHz)	Height (m)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
512/1850.2	150	62	20.41	33.01	-12.60	Pass	H
	150	81	27.11	33.01	-5.90	Pass	V
661/1880.0	150	102	19.83	33.01	-13.18	Pass	H
	150	152	27.41	33.01	-5.60	Pass	V
810/1909.8	150	160	20.68	33.01	-12.33	Pass	H
	150	107	26.96	33.01	-6.05	Pass	V

GPRS 1900							
Channel/fc (MHz)	Height (m)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
512/1850.2	150	106	19.48	33.01	-13.53	Pass	H
	150	137	28.01	33.01	-5.00	Pass	V
661/1880.0	150	182	19.71	33.01	-13.30	Pass	H
	150	129	27.67	33.01	-5.34	Pass	V
810/1909.8	150	150	20.05	33.01	-12.96	Pass	H
	150	117	27.36	33.01	-5.65	Pass	V

WCDMA band II							
Channel/fc (MHz)	Height (m)	Azimuth (deg)	EIRP (dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
9262/1852.4	150	210	18.04	33.01	-14.97	Pass	H
	150	62	26.78	33.01	-6.23	Pass	V
9400/1880.0	150	91	17.68	33.01	-15.33	Pass	H
	150	103	28.17	33.01	-4.84	Pass	V
9538/1907.6	150	153	18.21	33.01	-14.80	Pass	H
	150	216	29.03	33.01	-3.98	Pass	V

Appendix H) Field strength of spurious radiation

Receiver Setup:	Frequency	Detector	RBW	VBW	Remark
	0.009MHz-30MHz	Peak	10kHz	30kHz	Peak
	30MHz-1GHz	Peak	100kHz	300kHz	Peak
	Above 1GHz	Peak	1MHz	3MHz	Peak
Measurement Procedure:	1. Scan up to 10th harmonic, find the maximum radiation frequency to measure. 2. The technique used to find the Spurious Emissions of the transmitter was the antenna substitution method. Substitution method was performed to determine the actual ERP/EIRP emission levels of the EUT. Test procedure as below: 1) The EUT was powered ON and placed on a 1.5m high table at a 3 meter fully Anechoic Chamber. The antenna of the transmitter was extended to its maximum length. modulation mode and the measuring receiver shall be tuned to the frequency of the transmitter under test. 2) The EUT was set 3 meters(above 18GHz the distance is 1 meter) away from the interference-receiving antenna, which was mounted on the top of a variable-height antenna tower. 3) The disturbance of the transmitter was maximized on the test receiver display by raising and lowering from 1m to 4m the receive antenna and by rotating through 360° the turntable. After the fundamental emission was maximized, a field strength measurement was made. 4) Steps 1) to 3) were performed with the EUT and the receive antenna in both vertical and horizontal polarization. 5) The transmitter was then removed and replaced with another antenna. The center of the antenna was approximately at the same location as the center of the transmitter. 6) A signal at the disturbance was fed to the substitution antenna by means of a non-radiating cable. With both the substitution and the receive antennas horizontally polarized, the receive antenna was raised and lowered to obtain a maximum reading at the test receiver. The level of the signal generator was adjusted until the measured field strength level in step 3) is obtained for this set of conditions. 7) The output power into the substitution antenna was then measured. 8) Steps 6) and 7) were repeated with both antennas polarized. 9) Calculate power in dBm by the following formula: $\text{ERP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBd)}$ $\text{EIRP(dBm)} = \text{Pg(dBm)} - \text{cable loss (dB)} + \text{antenna gain (dBi)}$ $\text{EIRP} = \text{ERP} + 2.15\text{dB}$ where: Pg is the generator output power into the substitution antenna. 10) Test the EUT in the lowest channel, the middle channel the Highest channel 11) The radiation measurements are performed in X, Y, Z axis positioning for EUT operation mode, And found the X axis positioning which it is worse case. 12) Repeat above procedures until all frequencies measured was complete.				
Limit:	Attenuated at least 43+10log(P)				

GPRS 850 (lower channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level(dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1648.4	150	36	-32.14	-13	-19.14	Pass	H
2472.6	150	84	-33.52	-13	-20.52	Pass	H
3296.8	150	173	-38.67	-13	-25.67	Pass	H
1648.4	150	42	-42.53	-13	-29.53	Pass	V
2472.6	150	163	-38.56	-13	-25.56	Pass	V
3296.8	150	184	-40.51	-13	-27.51	Pass	V

GPRS 1900 (lower channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level(dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
3819.6	150	83	-40.76	-13	-27.76	Pass	H
5726.4	150	216	-40.82	-13	-27.82	Pass	H
7636.2	150	163	-39.78	-13	-26.78	Pass	H
3819.6	150	105	-41.83	-13	-28.83	Pass	V
5726.4	150	38	-40.92	-13	-27.92	Pass	V
7636.2	150	106	-41.37	-13	-28.37	Pass	V

GSM 850 (lower channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level(dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1648.4	150	32	-40.56	-13	-27.56	Pass	H
2472.6	150	102	-41.62	-13	-28.62	Pass	H
3296.8	150	84	-41.57	-13	-28.57	Pass	H
1648.4	150	121	-38.63	-13	-25.63	Pass	V
2472.6	150	216	-40.92	-13	-27.92	Pass	V
3296.8	150	305	-39.05	-13	-26.05	Pass	V

GSM 1900 (lower channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level(dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
3819.6	150	43	-40.72	-13	-27.72	Pass	H
5726.4	150	183	-41.62	-13	-28.62	Pass	H
7636.2	150	6	-41.06	-13	-28.06	Pass	H
3819.6	150	124	-42.31	-13	-29.31	Pass	V
5726.4	150	76	-42.16	-13	-29.16	Pass	V
7636.2	150	182	-43.67	-13	-30.67	Pass	V

HSDPA 850 (lower channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level(dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1648.4	150	271	-33.43	-13	-20.43	Pass	H
2472.6	150	206	-45.35	-13	-32.35	Pass	H
3296.8	150	84	-47.39	-13	-34.39	Pass	H
1648.4	150	39	-29.45	-13	-16.45	Pass	V
2472.6	150	218	-49.64	-13	-36.64	Pass	V
3296.8	150	263	-48.4	-13	-35.4	Pass	V

HSDPA 1900 (lower channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level(dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
3819.6	150	215	-41.47	-13	-28.47	Pass	H
5726.4	150	31	-37.78	-13	-24.78	Pass	H
7636.2	150	65	-33.73	-13	-20.73	Pass	H
3819.6	150	8	-42.57	-13	-29.57	Pass	V
5726.4	150	95	-41.17	-13	-28.17	Pass	V
7636.2	150	102	-37.98	-13	-24.98	Pass	V

WCDMA 850 (lower channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level(dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
1648.4	150	78	-38.12	-13	-25.12	Pass	H
2472.6	150	102	-39.61	-13	-26.61	Pass	H
3296.8	150	139	-40.51	-13	-27.51	Pass	H
1648.4	150	97	-36.91	-13	-23.91	Pass	V
2472.6	150	108	-39.67	-13	-26.67	Pass	V
3296.8	150	113	-40.52	-13	-27.52	Pass	V

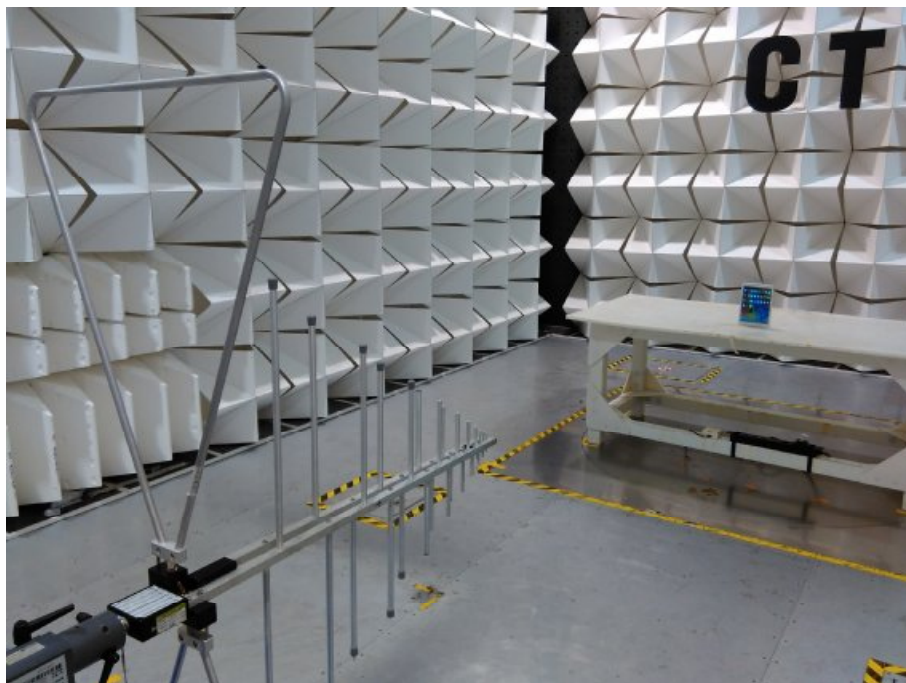
WCDMA 1900 (lower channel)							
Frequency (MHz)	Height (cm)	Azimuth (deg)	Spurious Emission Level(dBm)	Limit (dBm)	Over Limit (dB)	Result	Antenna Polaxis.
3819.6	150	106	-37.61	-13	-24.61	Pass	H
5726.4	150	173	-38.64	-13	-25.64	Pass	H
7636.2	150	39	-40.51	-13	-27.51	Pass	H
3819.6	150	167	-39.74	-13	-26.74	Pass	V
5726.4	150	85	-40.51	-13	-27.51	Pass	V
7636.2	150	215	-41.32	-13	-28.32	Pass	V

Note:

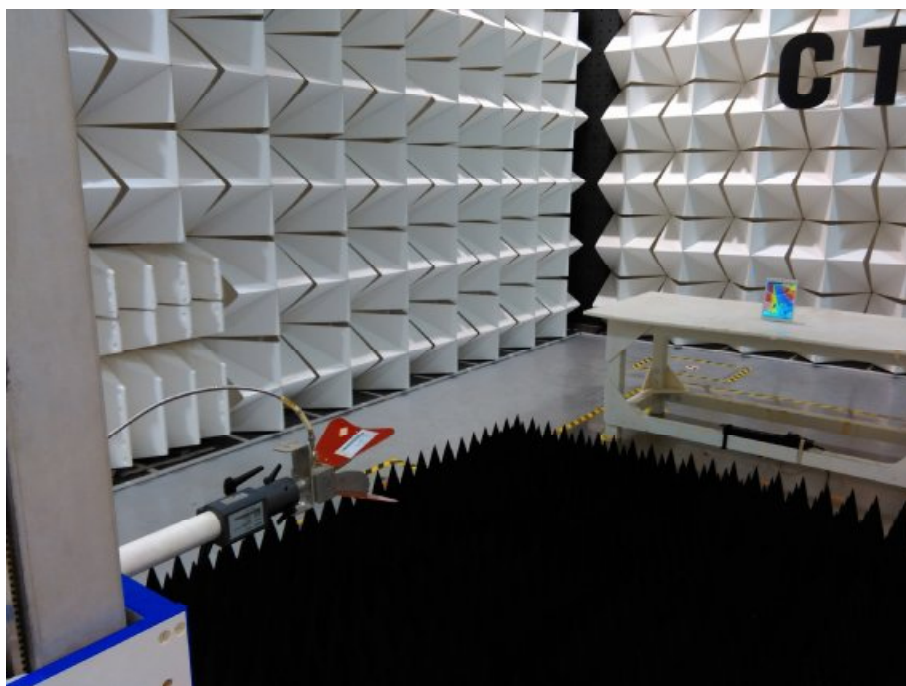
1) Scan from 9kHz to 25GHz, the disturbance above 13GHz and below 30MHz was very low, and the above harmonics were the highest point could be found when testing, so only the above harmonics had been displayed. The amplitude of spurious emissions from the radiator which are attenuated more than 20dB below the limit need not be reported.

PHOTOGRAPHS OF TEST SETUP

Test mode No.: E97



Radiated spurious emission Test Setup-1(Below 1GHz)



Radiated spurious emission Test Setup-2(Above 1GHz)

PHOTOGRAPHS OF EUT Constructional Details

Test mode No.: E97



View of product-1



View of product-2



View of product-3



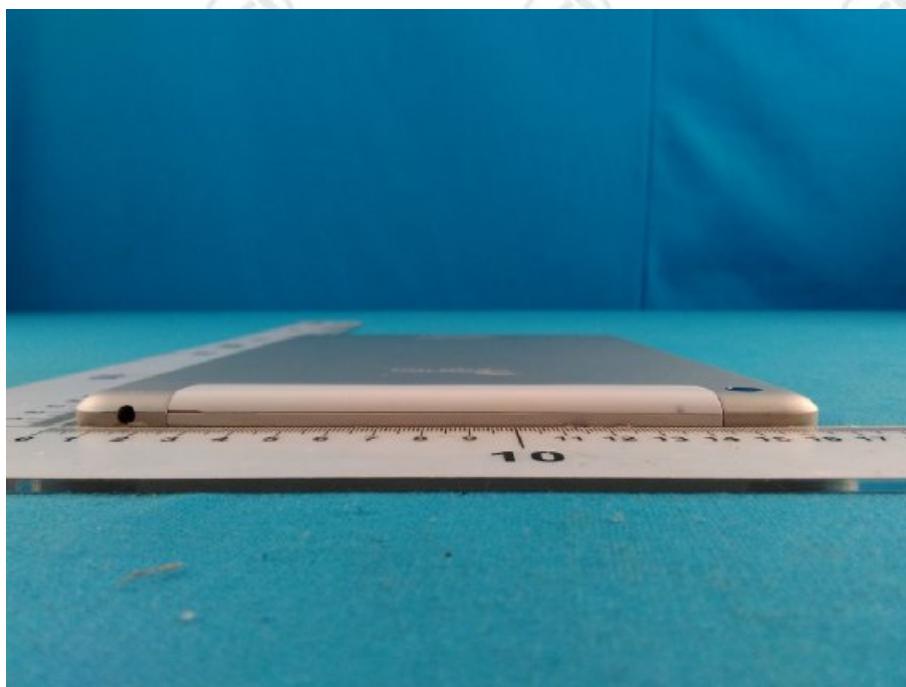
View of product-4



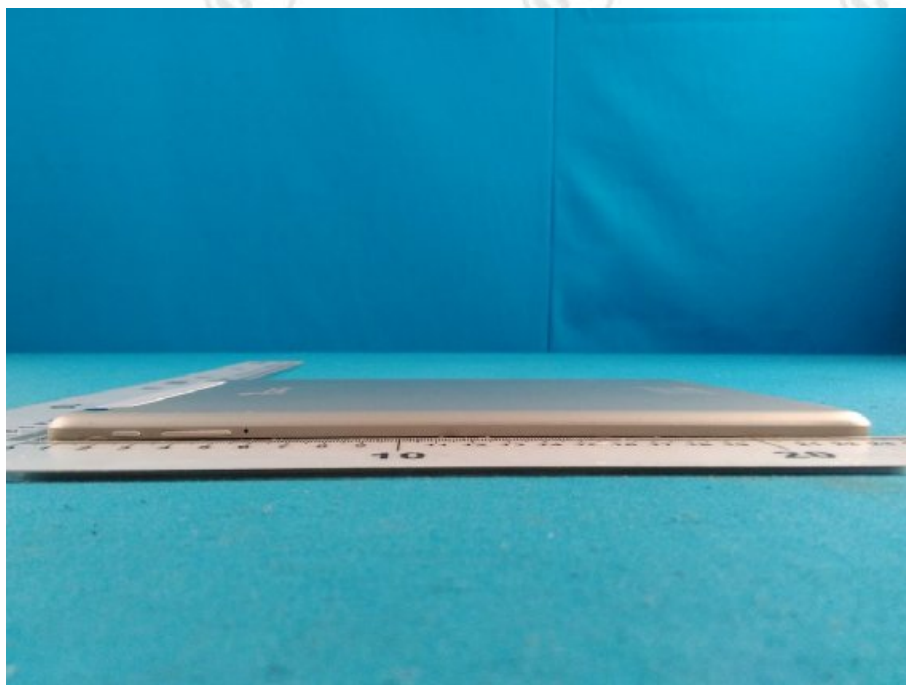
View of product-5



View of product-6



View of product-7



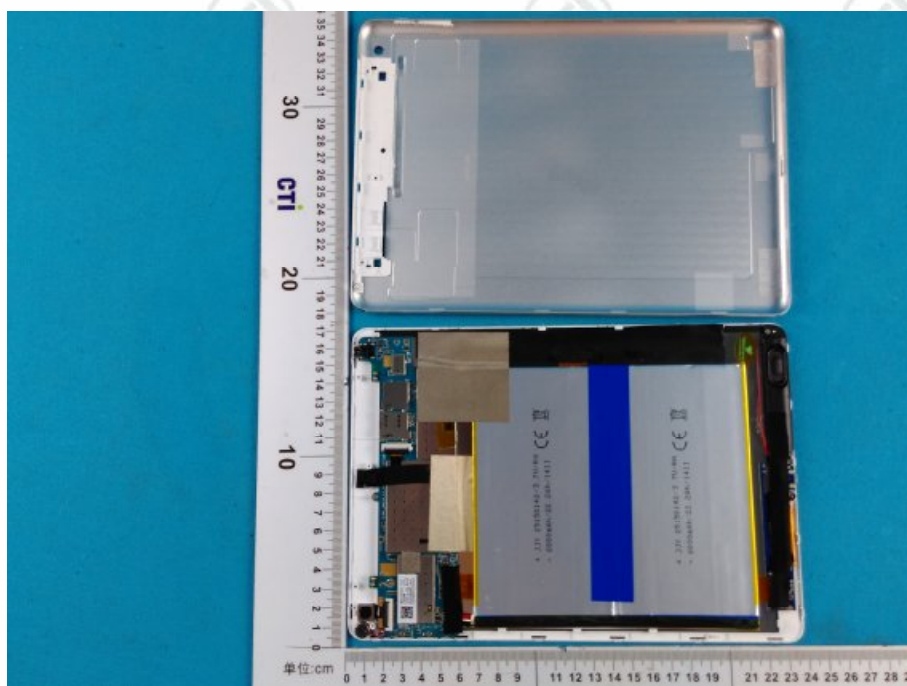
View of product-8



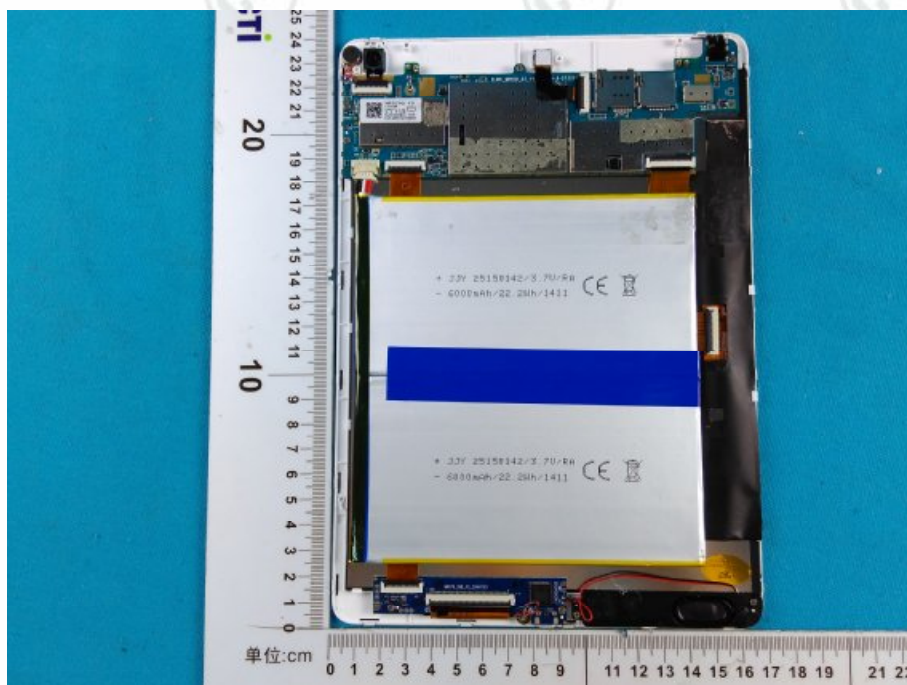
View of product-9



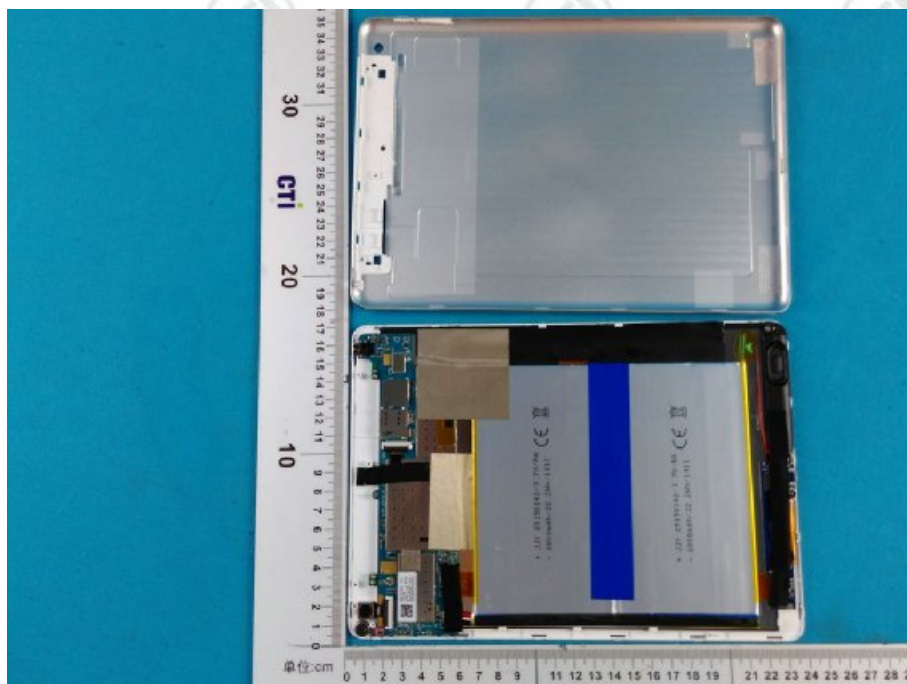
View of product-10



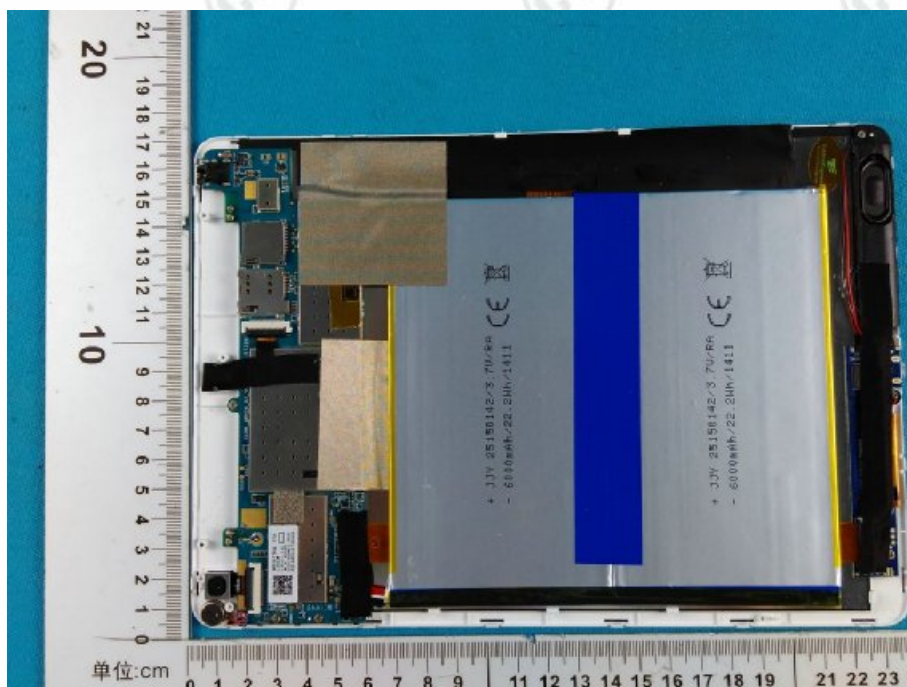
View of product-11



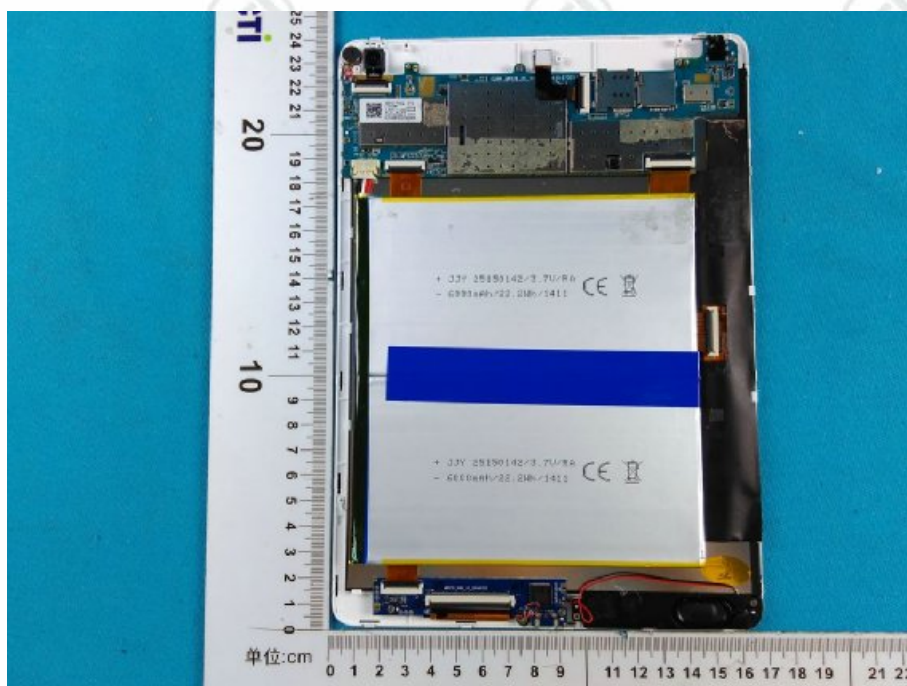
View of product-12



View of product-13



View of product-14



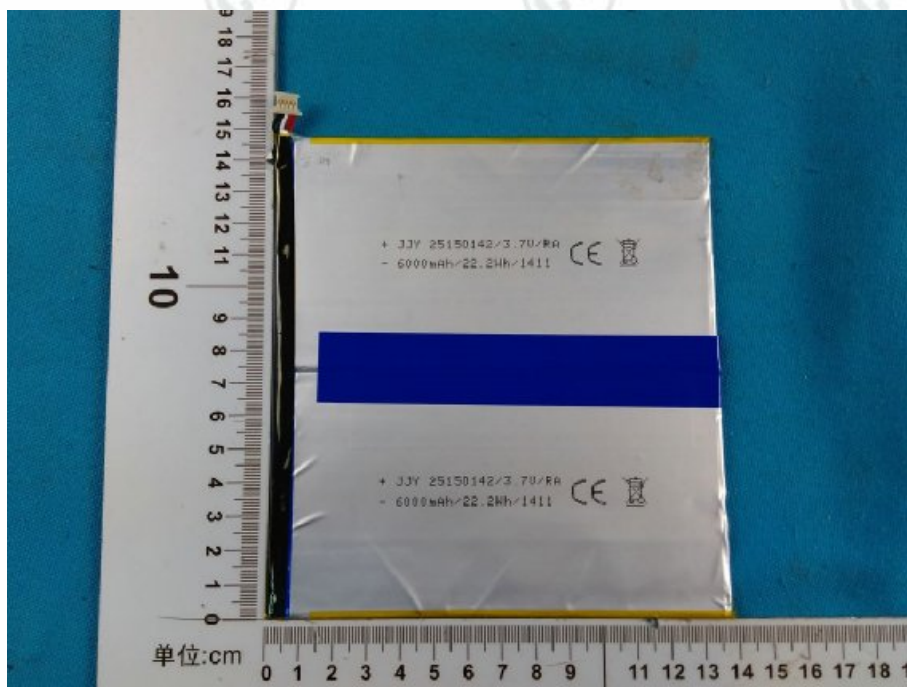
View of product-15



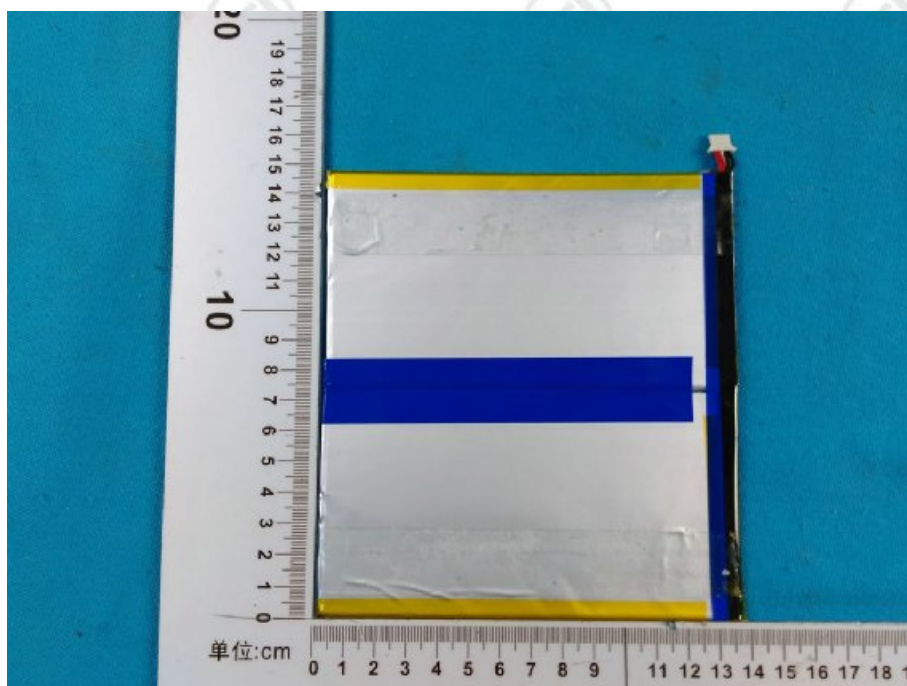
View of product-16



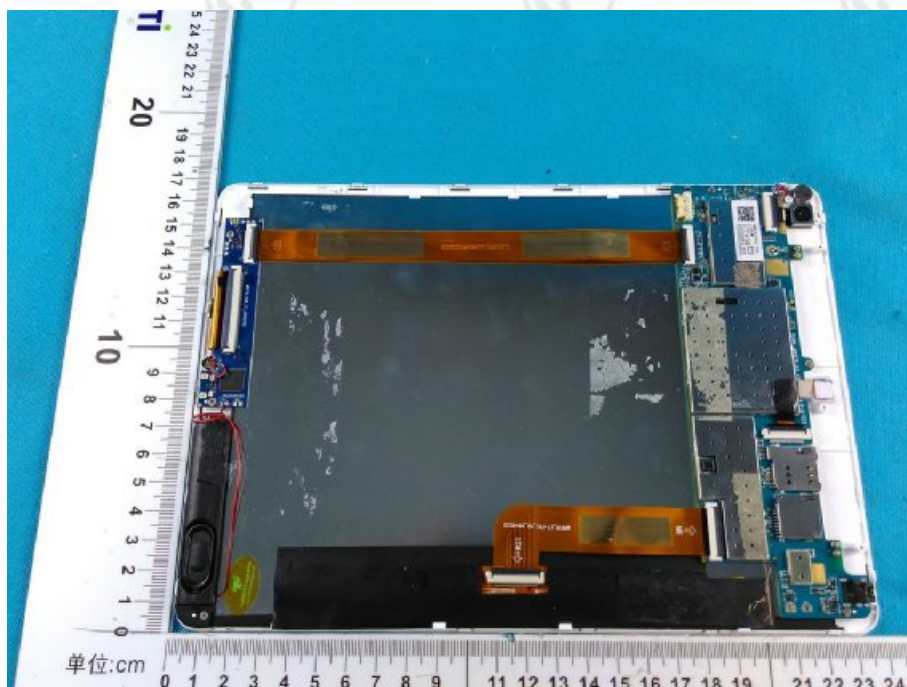
View of product-17



View of product-18



View of product-19



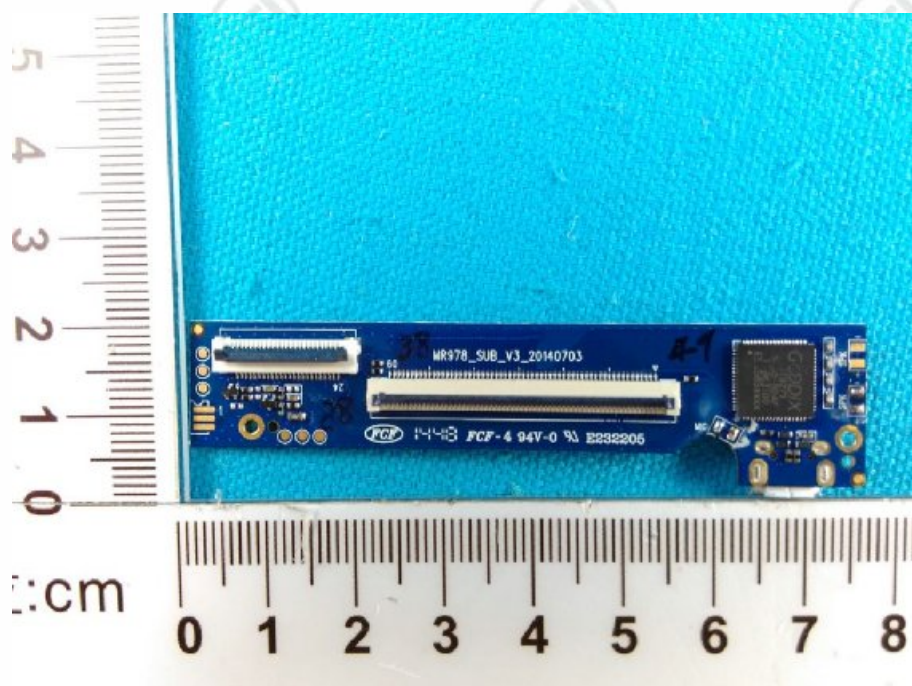
View of product-20



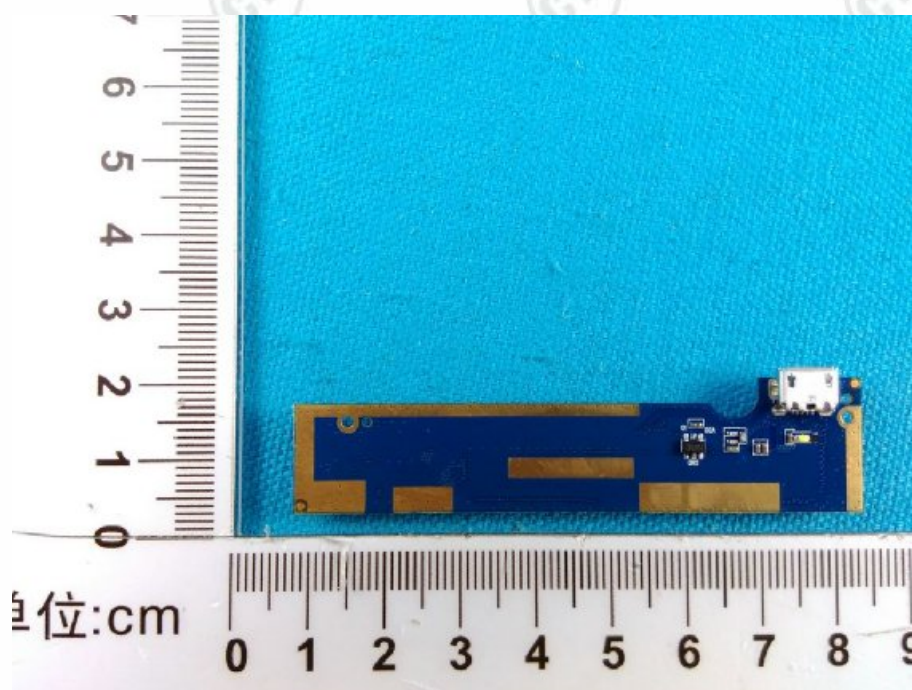
View of product-21



View of product-22



View of product-23



View of product-24



View of product-25



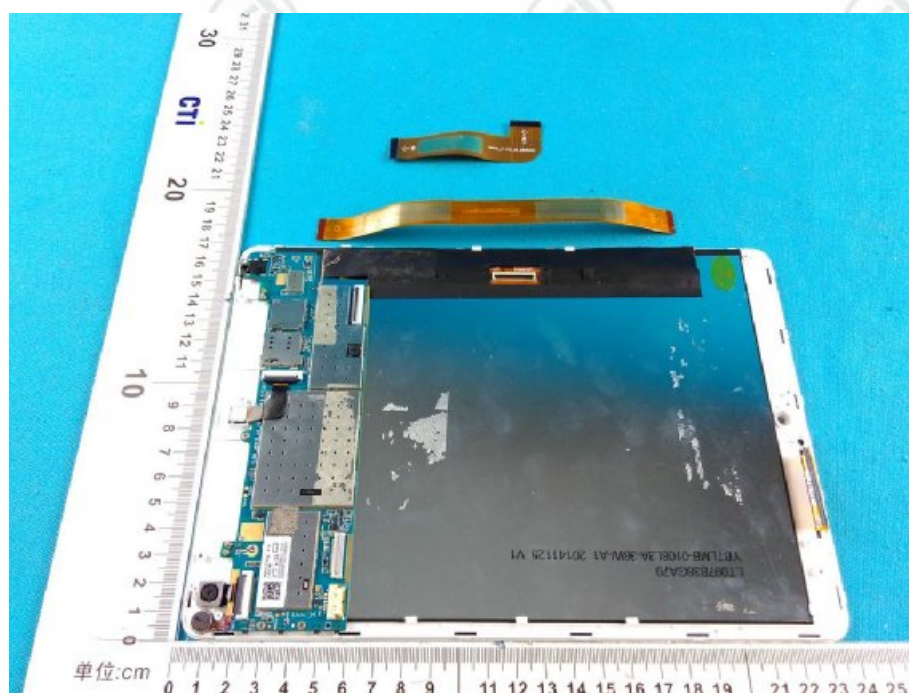
View of product-26



View of product-27



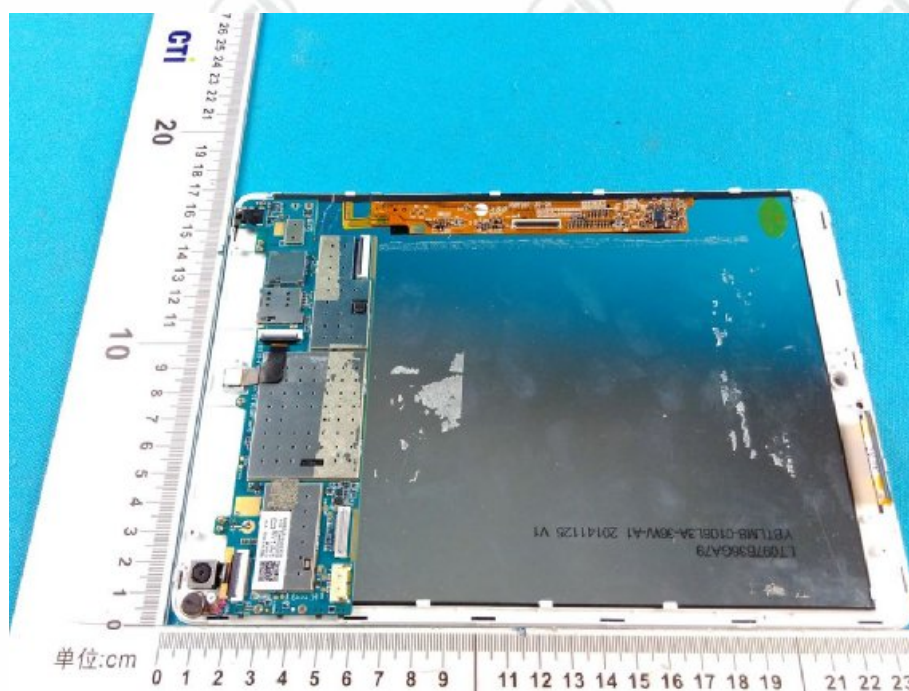
View of product-28



View of product-29



View of product-30



View of product-31



View of product-32



View of product-33



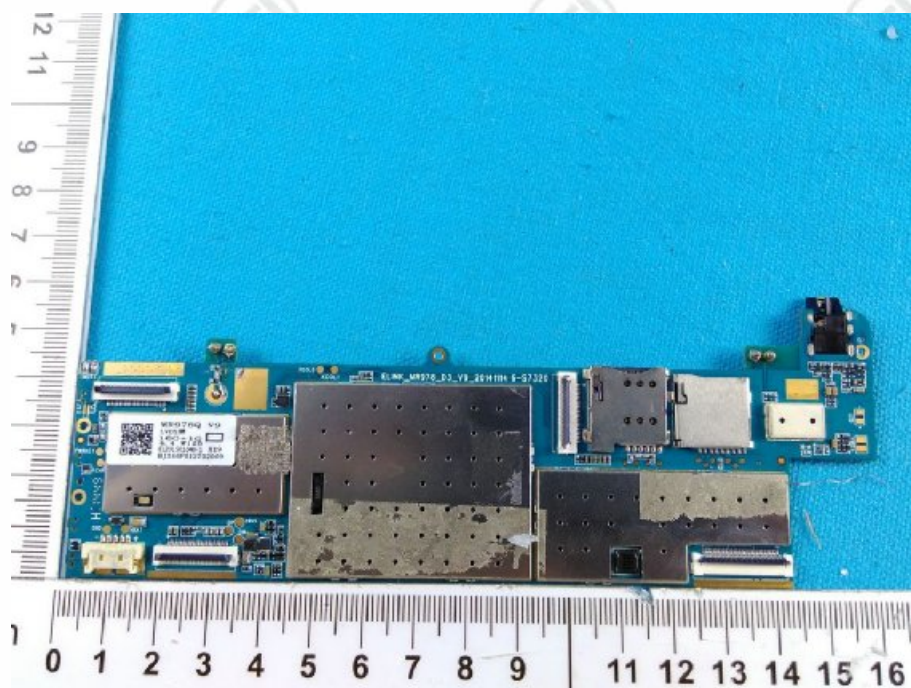
View of product-34



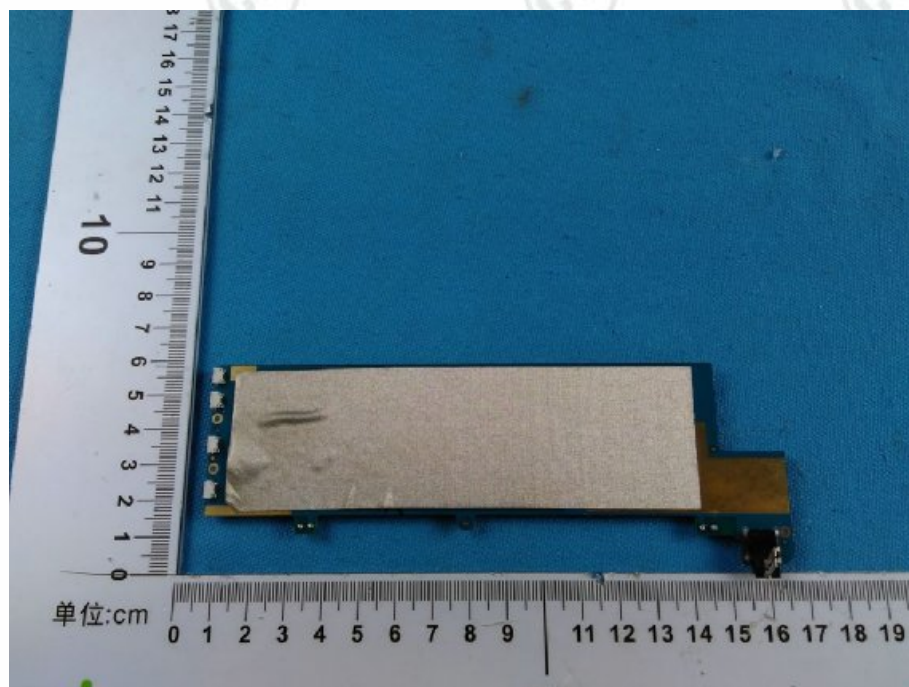
View of product-35



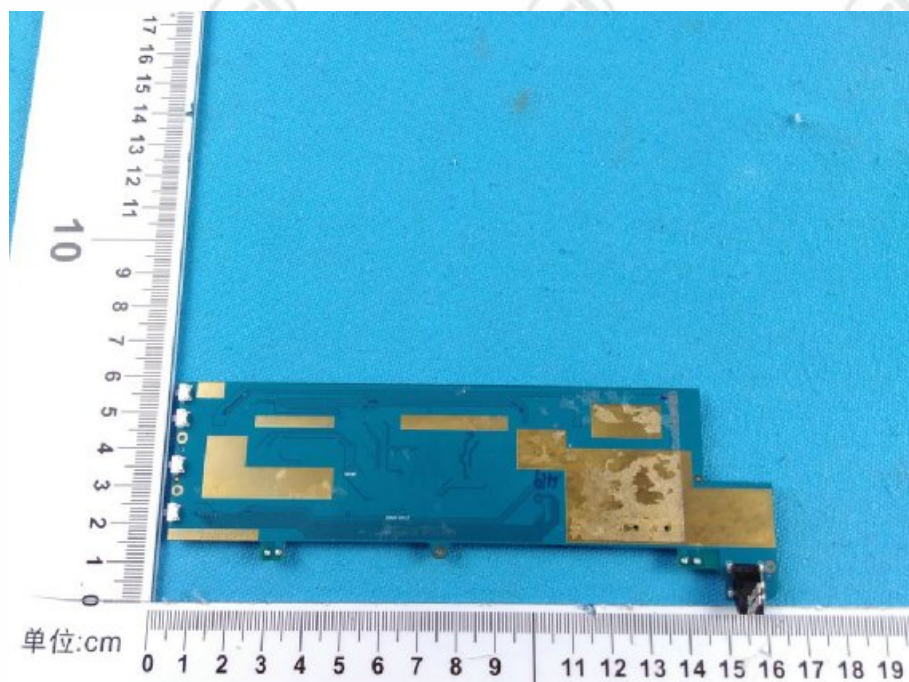
View of product-36



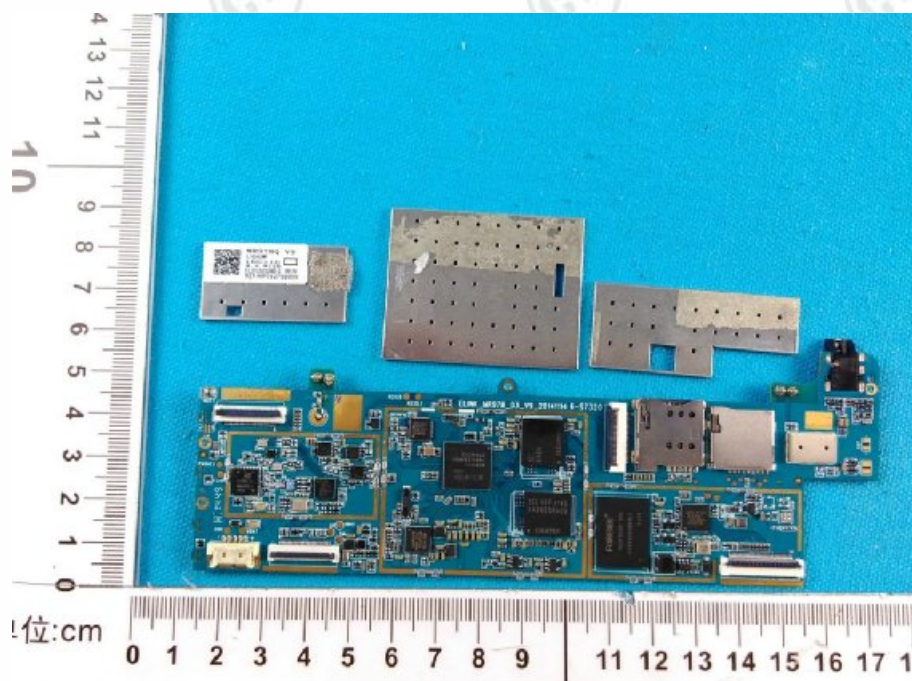
View of product-37



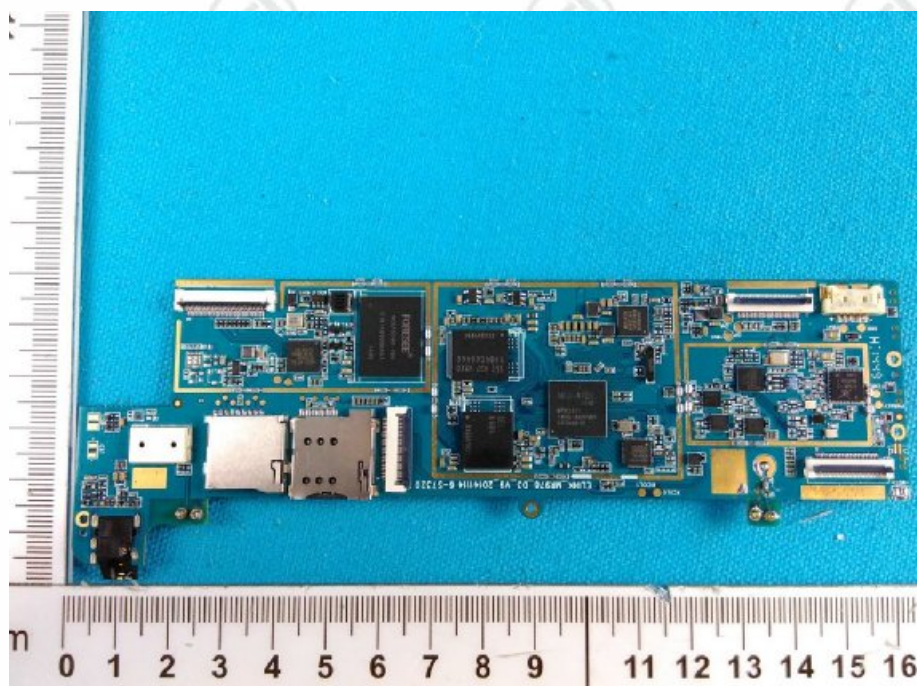
View of product-38



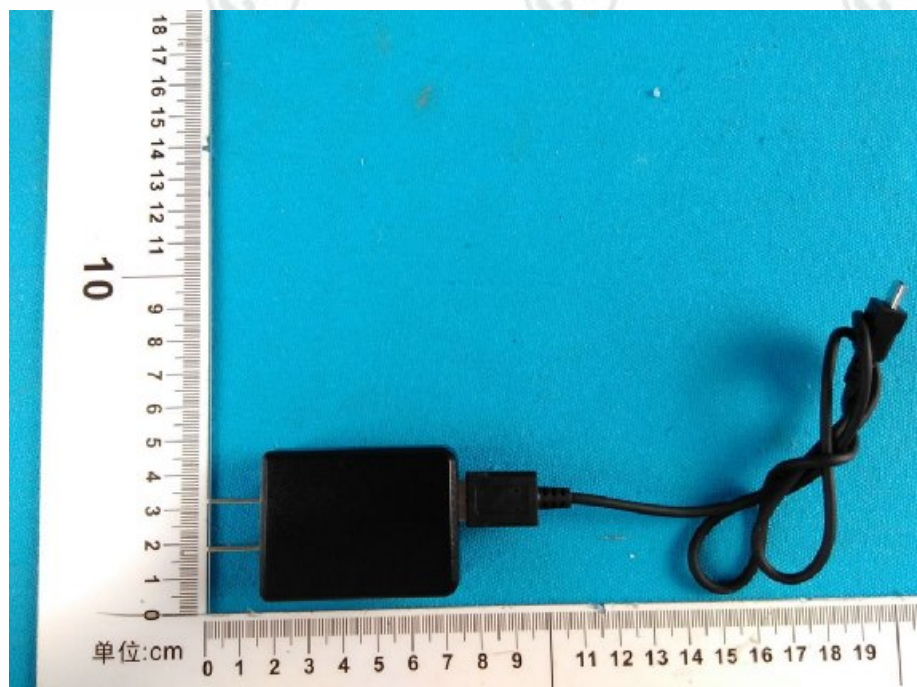
View of product-39



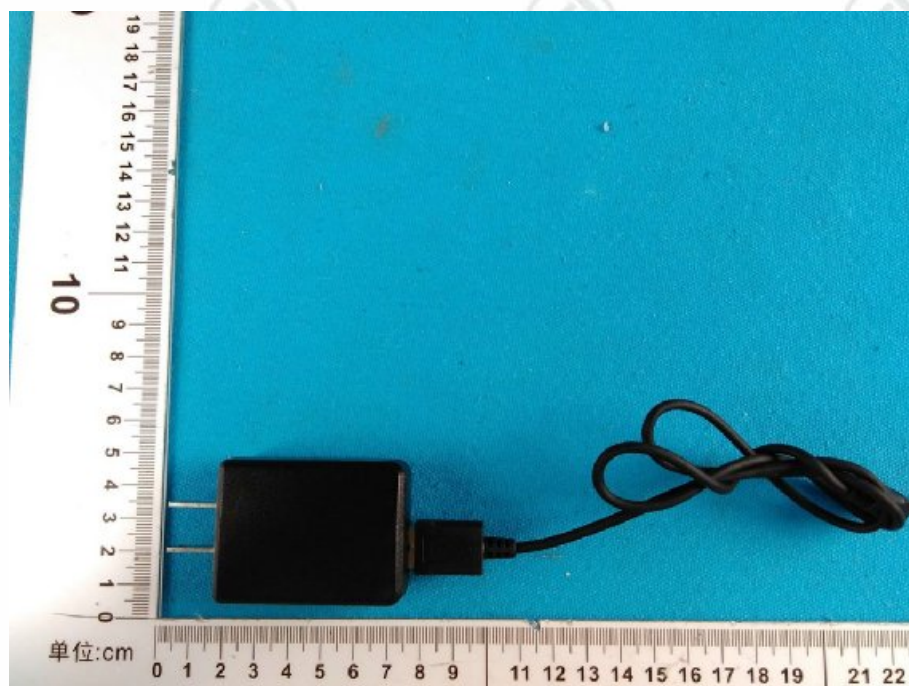
View of product-40



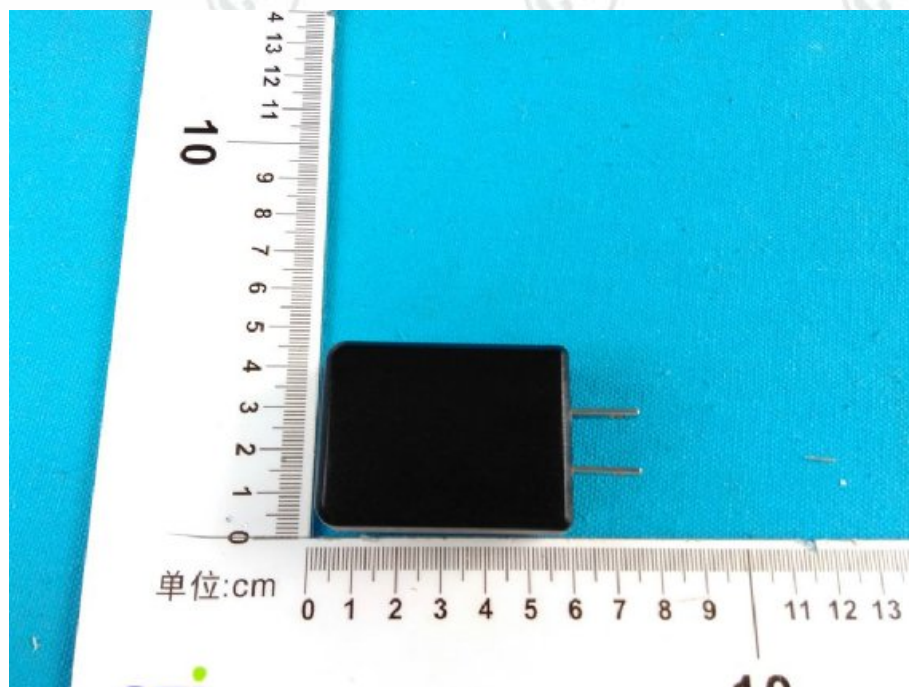
View of product-41



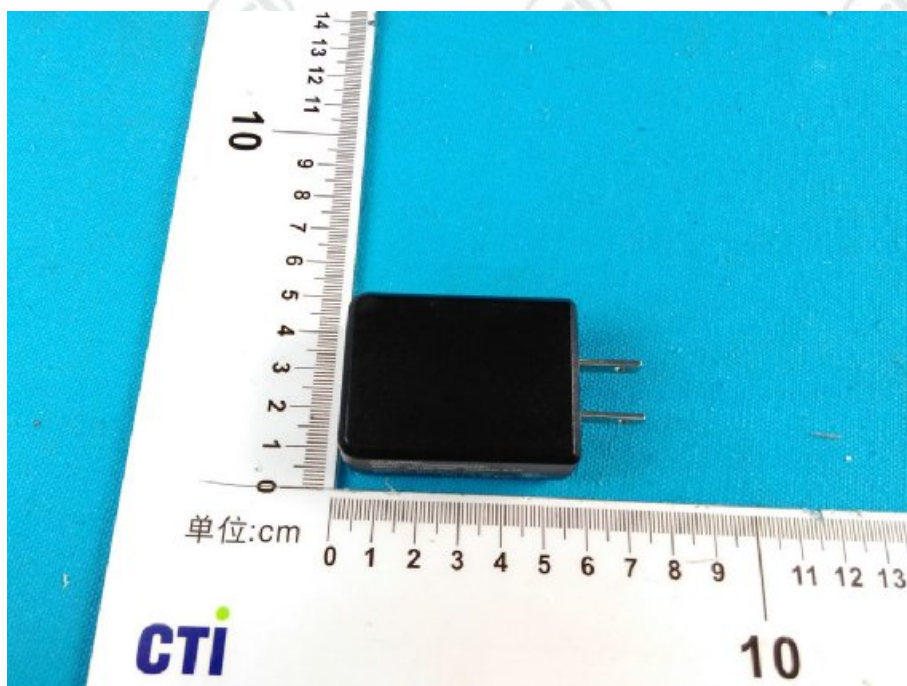
View of product-42(Adapter)



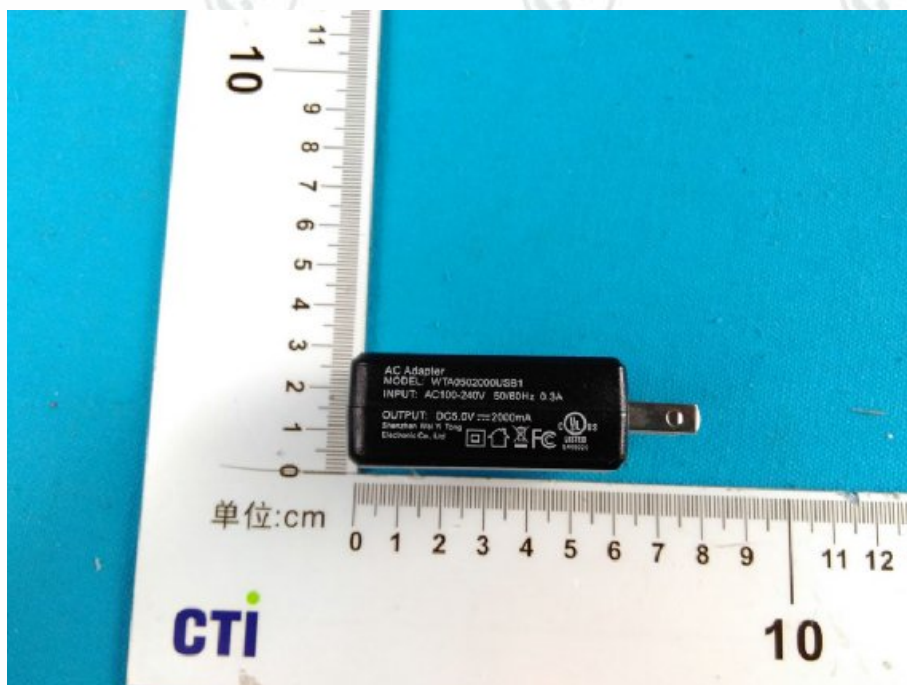
View of product-43(Adapter)



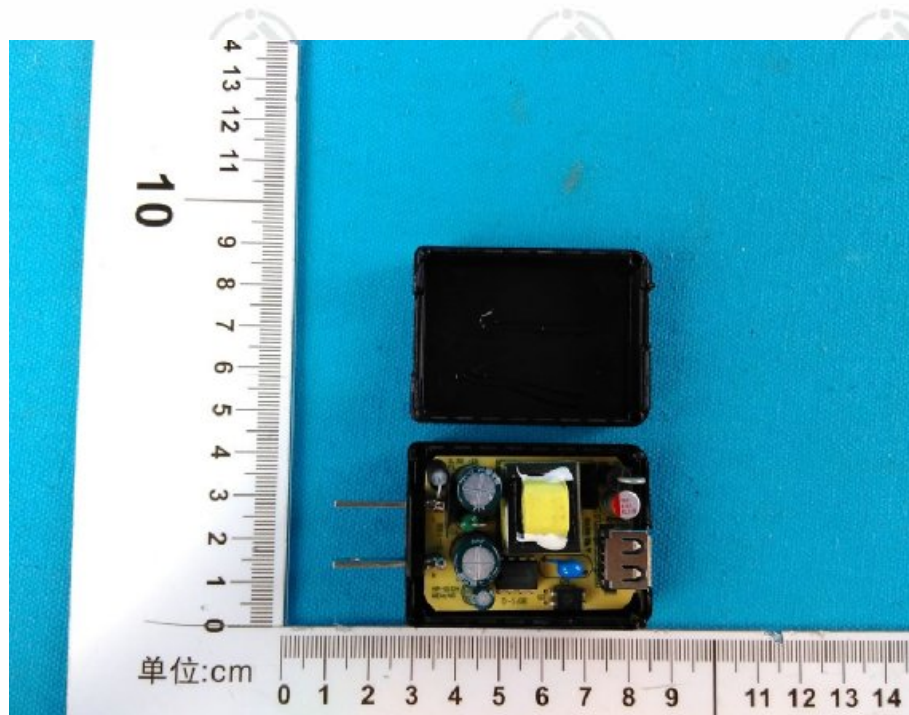
View of product-44(Adapter)



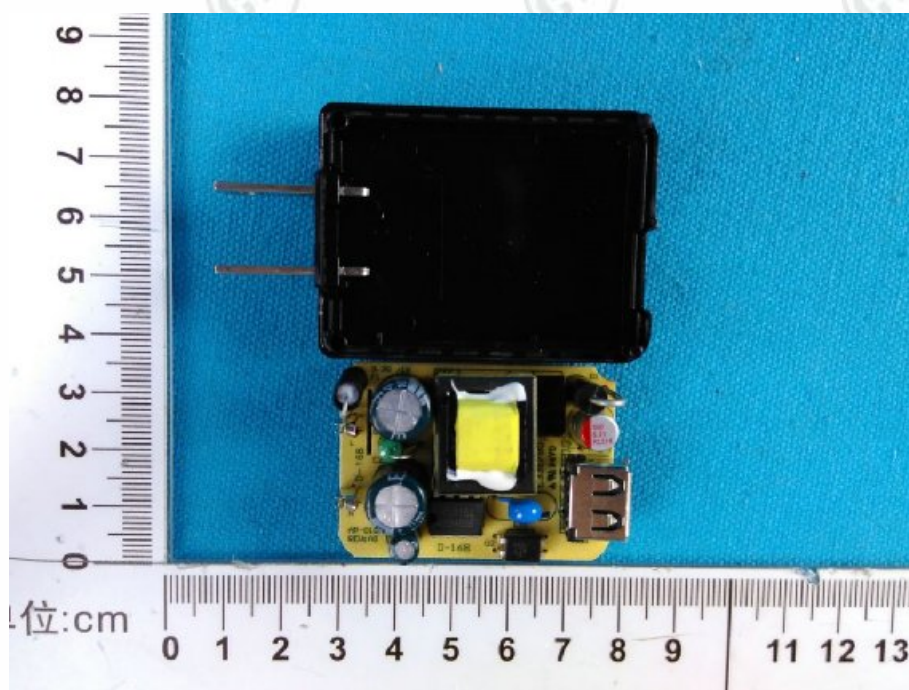
View of product-45(Adapter)



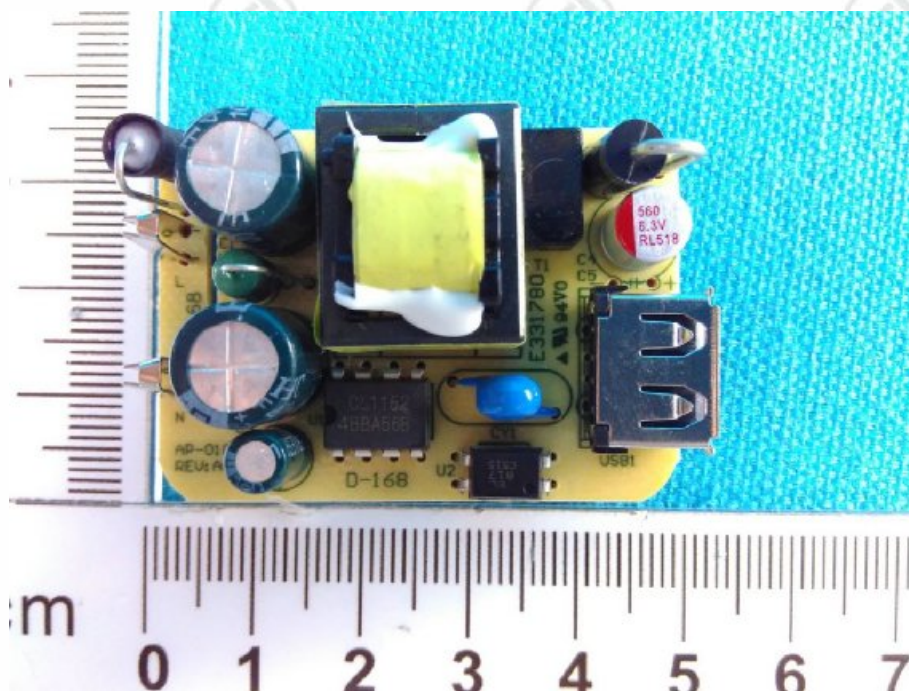
View of product-46(Adapter)



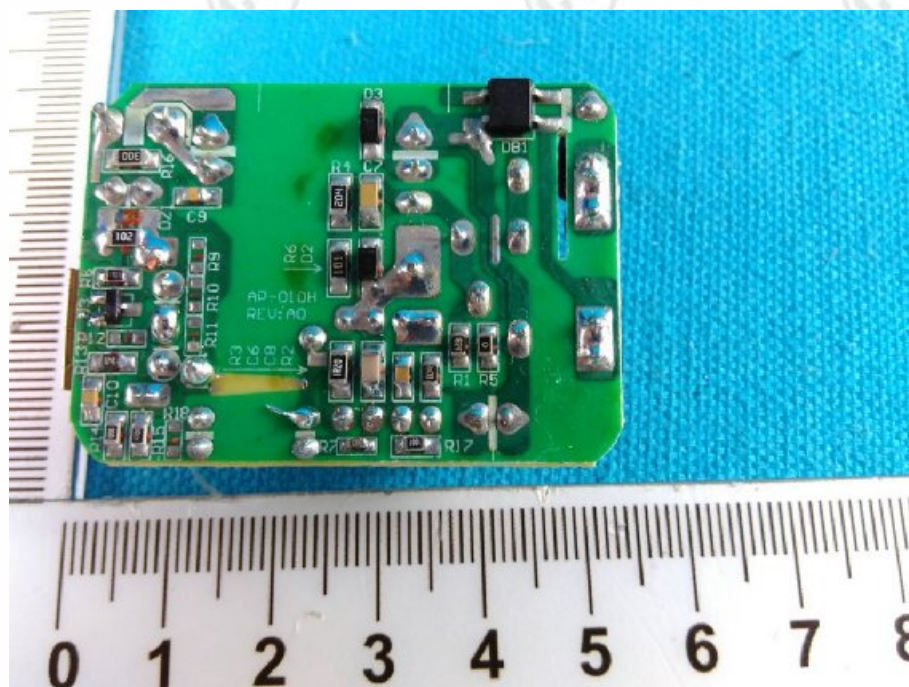
View of product-47(Adapter)



View of product-48(Adapter)



View of product-49(Adapter)



View of product-50(Adapter)

*** End of Report ***

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